The Oil and Gas Journal

PRODUCING REFINING MARKETING

VOL. 25. NO. 48. TULSA, OKLAHOMA, APRIL 21, 1927

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Floods Cause Decrease in Production

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,139 bbls. Lowest in 1926, January 30, 1,915,960 bbls.

Condition Temporary With Trend of Output Upward. Magnolia Again Cuts Crude Prices

By Andrew M. Rowley

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

Flood conditions in Oklahoma, Kansas and Arkansas curtailed operations in these areas sufficiently last week to cause a decrease in crude oil production for the entire country despite a substantial increase recorded in North and West Texas. But, with the passing of the high waters, production in the fields most affected began to assume normal conditions and all indications point to further gains in output during this week. The trend of crude oil production throughout the country continues upward with all signs pointing to a new peak sometime during May.

The crude oil price situation in the Mid-Continent area was complicated further on Wednesday of this week when the Magnolia Petroleum Company announced a reduction of 10 cents a barrel, before other major buyers had met its reduction of 15 cents a barrel announced April 7. These other companies may try to maintain their present schedules of prices until production shows further gains. But, when the wells nearing completion in the Bowlegs sector at Seminole begin to make their presence felt in the production column, the industry should not be surprised if another general price adjustment is made effective. It is believed the Seminole area in Oklahoma will show a daily average of approximately 350,000 barrels during the next four months. It is almost certain north and west Texas will maintain a big output and little if any decrease can be expected from California for some time.

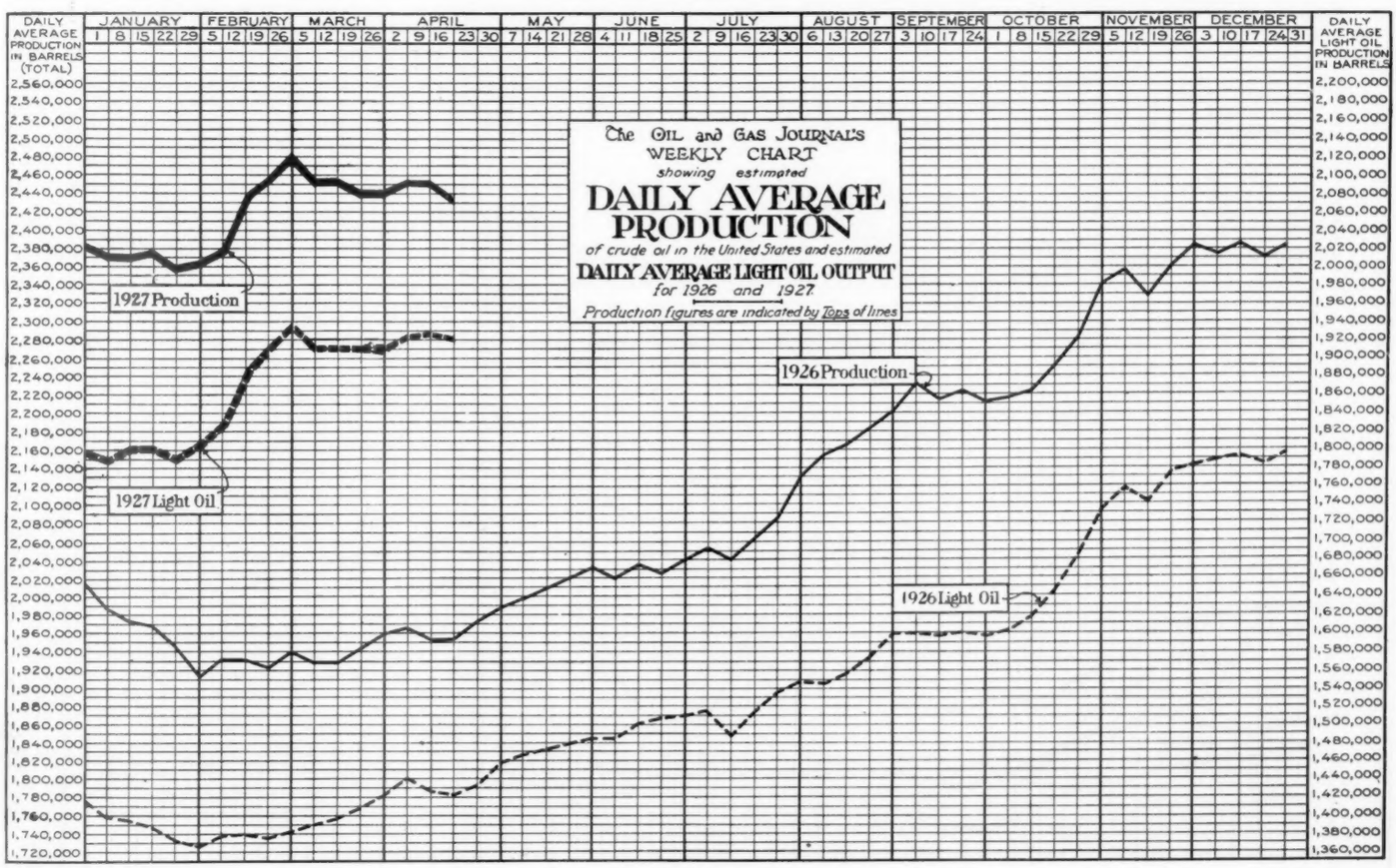
The West Texas fields and the Wichita Falls area in Texas recorded a new high average daily production during the past week, Crane County showing a daily average gain of 7,000 barrels. The Seal Beach Field in California showed a gain of 5,000 barrels daily and it is felt the production of California will show further gains during the next month or so at least. The Bowlegs sector of the Seminole area in Oklahoma has been showing steady gains. There are about 30 wells there due for completion during the next 30 days and operators feel the output of these wells will total somewhere around 75,000 barrels.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended April 16, and a comparison with the previous week follows:

	Apr. 16		Apr. 9	
Oklahoma—	Light	Heavy	Light	Heavy
Tonkawa	23,145	.....	23,290	.....
Burbank	43,305	.....	44,105	.....
Other Osage Fields	35,075	.....	35,185	.....
Cushing and Shamrock	21,140	.....	21,190	.....
Bristow and Eastern Bristow	27,245	.....	27,230	.....
Cromwell	13,240	.....	13,415	.....
Garber	16,785	.....	17,170	.....
Blackwell-Braman	13,905	.....	14,155	.....
Seminole	325,910	.....	334,415	.....
Wewoka	17,330	.....	17,105	.....
Northern Miscellaneous	110,715	.....	111,245	.....
Southern Fields	67,040	.....	67,330	.....
Total Oklahoma	714,835	.....	725,805	.....
North Louisiana	41,175	11,165	40,950	11,300
Arkansas	24,770	90,760	25,290	97,120
North Central and West Texas	271,300	.....	261,465	.....
Texas Panhandle	118,545	.....	118,300	.....
East Central Texas	38,346	.....	38,801	.....
Kansas	113,810	.....	116,955	.....
Total Mid-Continent Area	1,322,781	101,925	1,327,566	108,420
Gulf Coast	.....	142,785	.....	147,287
Southwest Texas	.....	37,975	.....	36,930
Eastern	106,000	.....	105,000	.....
Rocky Mountain Area	81,165	.....	83,705	.....
California—				
Santa Fe Springs	43,500	.....	44,000	.....
Long Beach	92,500	.....	92,000	.....
Torrance	6,000	18,000	6,000	18,500
Huntington Beach	72,500	.....	73,000	.....
Dominguez	18,000	.....	18,000	.....
Rosecrans	12,000	.....	13,000	.....
Inglewood	24,000	13,000	24,500	13,000
Ventura Avenue	51,500	.....	52,000	.....
Seal Beach	36,000	.....	31,000	.....
Remainder of State	59,000	199,000	59,000	199,000
Total California	415,000	230,000	412,500	230,500
Total United States	1,924,946	512,685	1,928,771	523,137
Grand Total		2,437,631		2,451,908

Total Decrease, 14,277 Bbls.; Light Oil Decrease, 3,825 Bbls.



Weather Slows Up Gasoline Demand

Prices of Oklahoma Firm. Fuel Oils Continue to Decline. Believe Gas Oils at Bottom

By C. O. Willson

The gasoline tank car market in Oklahoma (Group 3) during the past week marked time. Prices on all grades were generally firm despite the fact that new business was disappointing. The latter fact is explained as partially a development of unfavorable weather conditions. Heavy rains accompanied by floods in the lower Mississippi Valley reduced the retail business in that section to a minimum and this was reflected in a dearth of tank car orders at refineries.

Fuel oils experienced the greatest price slump of any product during the week. Sellers generally found it necessary to reduce their quotations from 2½ to 7½ cents a barrel and gas oil quotations are off an additional one-eighth cent a gallon. Kerosenes are weak, but the actual price reductions were confined to the high-gravity grades. Distillates are practically out of the spot market and the few sellers during the past week refused to give any additional price concessions. Minor reductions were reported on some grades of neutrals during the week, but except for these changes the lub market was unchanged. The wax market continued inactive.

There were no definite developments of a general nature during the week on which predictions could be based relative to the probable future refined market trends. Both small and large buyers of crude oil have refused to meet the general reduction in Mid-Continent crude oil prices announced April 7 by the Magnolia Petroleum Co. This was considered an encouraging feature so far as the gasoline market was concerned. However, the general crude reduction in the eastern fields announced last week weakened somewhat this feeling that Mid-Continent schedules were not to be reduced.

REFINED MARKET BAROMETER

The refined market during the past week did not develop any price trends of a general nature. Gasoline prices were firm, except where local conditions necessitated reductions. Lower gasoline prices became effective in Louisiana and Arkansas refining areas, a development of the heavy rains and floods in that section which reduced consumption and hampered rail movement of tank cars. In the Los Angeles area of California the price war in the retailing of gasoline became more acute and this situation was reflected in still lower refinery prices. Fuel oil and gas oil prices declined during the week in the Mid-Continent and Middle West with a slowup in demand in Pennsylvania. Coastal fuel oil and gas oil prices continued firm. No important price changes were reported in kerosenes and distillates. The lubricating oil demand was generally satisfactory and prices firm. There were no price changes in wax. Now believed that wax prices after a decline of several weeks are on bottom. No important changes in natural gasoline prices.

Mid-Continent—Gasoline market generally firm, except north Louisiana and Arkansas areas where prices were reduced due to floods in lower Mississippi Val'ey. Fuel oils weak with greatest price slump in north Texas. Gas oils reduced one-eighth cent. Kerosene demand slow but prices firm. No change in lubs and wax.

Atlantic Seaboard—No further reductions in gasoline tank car prices. Kerosene firm. Gas oil and fuel oils steady. Better demand for lubricants. Export wax improving and prices believed to be at the bottom. Export movement generally showing improvement.

Pennsylvania—Improvement in both gasoline and kerosene movement and prices firm. Fuel oil soft. Neutrals very strong. Good demand for bright stocks.

Chicago—No change in gasolines, kerosenes and distillates. Fuel oil and gas oil prices lower. Lub oils active.

California—Gasoline market weakened by further reductions in tank wagon and service station prices in California. No change in other products.

Need Settled Weather

However, most refiners now profess not to be concerned about crude prices as a factor in the gasoline market. They are hoping for a period of two weeks or more of motoring weather in their consuming areas so that they can secure an accurate gauge on the demand for gasoline during the next few months.

Without exception, so far as the writer has been able to check, refiners with their own marketing facilities have experienced a very satisfactory increase in gallonage in their marketing territories whenever weather conditions were favorable But in most cases these periods have not been long enough to indicate what the gallonage will be when motoring weather is the rule and not the exception.

The sellers believe that when settled weather arrives there will be a substantial increase in gasoline consumption with a better movement from their plants. This expectation is the main reason why practically all refiners during the past week refused to lower their prices although all reported relatively few spot sales.

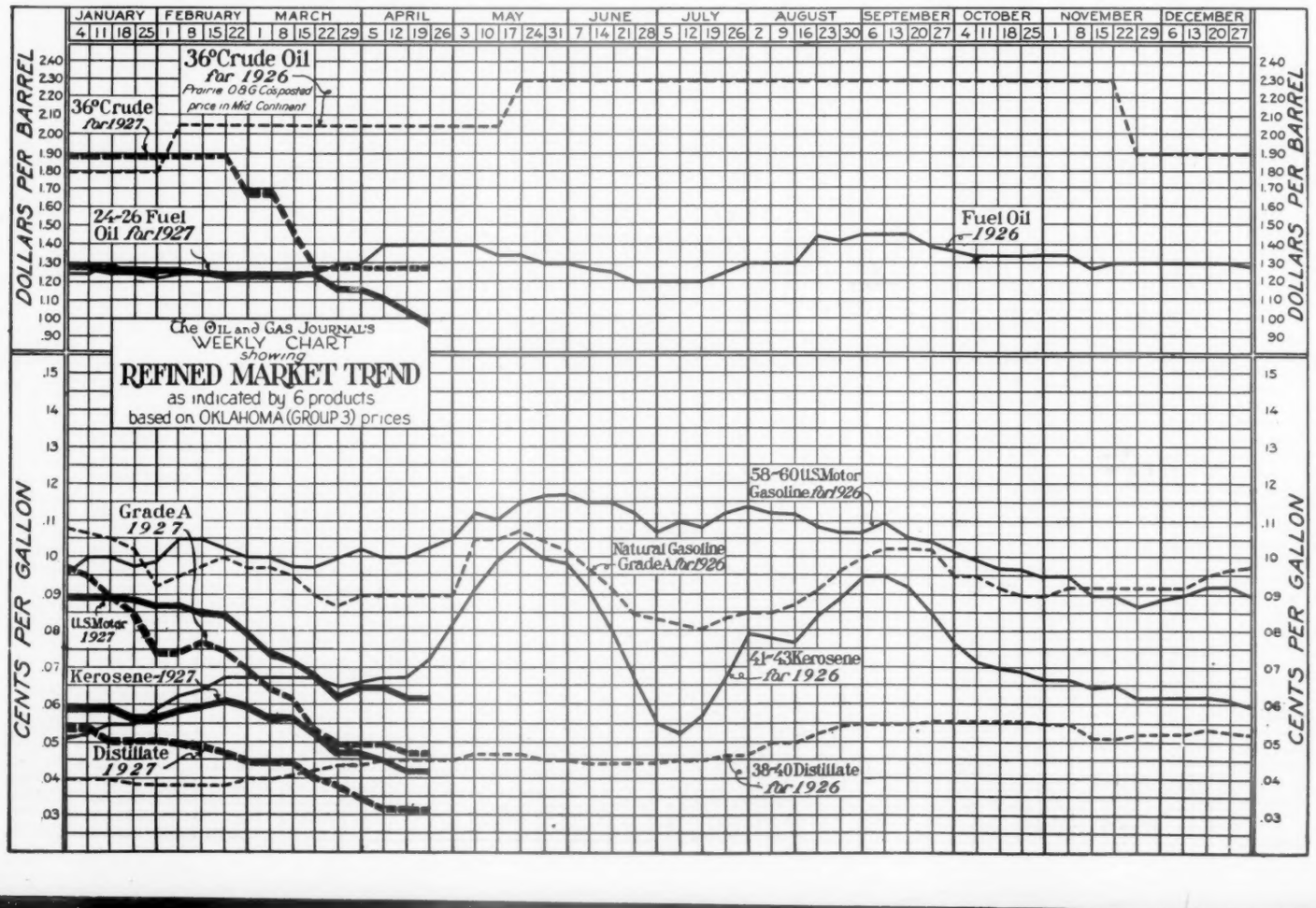
This optimistic attitude was reflected in the attitude of gasoline sales for May delivery. There were several buyers in the market who were willing to pay present price for gasolines over any part of May. So far as known this future business failed to appeal to any of the sellers. Some of the latter were asking as high as 7 cents for 58-60 U. S. Motor gasoline during May. Other refiners refused to quote, taking the position that the May market will at least be as high as April.

Gas Oils at Bottom

Developments of the past week lead to the belief on the part of many that gas oil prices are at the bottom. The check on the sensational decline in this product is due to its value as charging stock for cracking units. Considerable quantities were thrown on the market several weeks ago when a few plants decided to curtail temporarily their cracking operations.

These same companies in several in-

(Continued on Page 158)


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DOLLARS PER BARREL
36°Crude Oil for 1926
Prairie O&G Co posted price in Mid Continent
36°Crude for 1927
24-26 Fuel Oil for 1927
Fuel Oil 1926
The Oil and Gas Journal's WEEKLY CHART showing
REFINED MARKET TREND
as indicated by 6 products based on OKLAHOMA (GROUP 3) prices
CENTS PER GALLON
Grade A 1927
U.S.Motor 1927
Kerosene 1927
Distillate 1927
58-60 U.S.Motor Gasoline for 1926
Natural Gasoline Grade A for 1926
41-43 Kerosene for 1926
38-40 Distillate for 1926

Foresees Upheaval in Marketing Oil

Vacuum Oil Representative Warns A. O. M. A. That Super Station Is Coming. Salesmen, Not Attendants, Needed

By C. B. White*
Vacuum Oil Co.

As you undoubtedly noticed in the program, I am with the Vacuum Oil Co., marketers of Gargoyle Mobiloil, and as you also know, we market our products through the dealer only.

We do not own or operate any retail outlets, except a small line of stations in the East, in which we have purchased an interest to better enable us to understand your problems.

The problems of the filling station operators are our problems. Our company has studied the destiny of the independents very carefully. It has money enough, ability enough, and knowledge enough to do anything it wants to do. Yet it has decided to market its goods through the independent and the individual dealer. We are anxious that they prosper, because as they prosper we prosper.

Most every industry has a past, and every industry has a future, but the future of the oil industry is not going to be based so much on what has happened in the past, as it will on how quickly we can anticipate and meet the demands of an ever-changing public. The past in any line is no criterion for the future.

What Does the Future Hold?

There will be a tremendous market for gasoline and oils in the next few years. That is certain—but who is going to supply it?

In the past several years there was a tremendous market for automobiles, and that market some years ago was supplied by many manufacturers. Of these, there were many who thought only of the immediate, getting as much as they could as quickly as they could out of a willing but somewhat unsuspecting public. They failed to build for the future.

Today, in a greatly increased market, 85 per cent of the cars are manufactured by 16 companies, and of these nearly one-half belong to one group.

Not more than five years ago there were approximately 10,500,000 automobiles and approximately 12,000 filling stations—an average of 875 cars per station.

Today with over 20,000,000 automobiles we have more than 250,000 outlets for oil and gasoline—only 80 cars per station.

The answer to this is obvious.

Outlets in Other Businesses

Recently the United States Census Bureau compiled figures on the number of customers available for a large variety of retail stores. Among these we find that shoe merchants have approximately 5,000 customers each; drug stores potentially about 1,400; grocery stores, which are perhaps the most numerous of any line, still have potentially more than 500 customers per store.

Contrast this, if you please, with oil and gasoline outlets—with only 80 potential customers per outlet.

Filling stations or other outlets for oil and gasoline have increased 10 times faster than the market.

The big idea of the past was to follow the line of more stations to get more gallonage. Very little thought, if any, was given to the idea of more gallonage from present stations.

Most lines of business expand only when the volume of business outgrows the present location. Not so with the oil men. They build a new station first in the hopes of being able to reach out after more business.

But, what price increase?

One-third of that additional volume added to the old station with no increased overhead would have returned far more profit. It is the plus business that counts.

Here Is a Funny Thing

Now, here is a funny thing: The automobile which has brought the country to the city and the city to the country and has annihilated distance must have a service station every few feet in the city and every mile or so in the country.

Are so many small units economically sound? Personally, I don't think so. Numerous small outlets in other lines have not lasted Moving picture theaters, for instance. A few years ago there was a small picture house in almost every block. Where are these small houses today?

They have all given way to the large superhouses located at strategic points and this has been made a practical success by the automobile, which conveniently takes people to the location of the super picture houses, but yet we feel that for the automobile itself it must have filling station every few blocks.

Super Station Coming

In my opinion the super station is coming fast. When it does, who is going to have the oil and gasoline business of the future?

A few days ago a representative of one of the major companies made the statement that within five years the gasoline supply would be in the hands of some six or seven companies.

This statement is rather far-fetched and it is not conceivable that the gasoline supply of this country can be controlled by a few interests, but at least you get from this the trend of the business policies of these large operators whose policy it is to carry their product through direct to the public.

One thing is certain: The next five years are going to bring about a tremendous and unusual upheaval in the retail oil business, and this upheaval is going to be felt most by those of us who have builded neither wisely nor well.

Too many of us in the oil industry have ridden the high tide of big demand without shaping a course that would carry us beyond the shoals. Some of us have had a definite policy, but many have not—simply drifting with the times and the tide—largely dependent on location. Others are losing their individuality by an attempt to run what might properly be called an oil department store. By that I mean keeping a small supply of all well-known brands of oil but mostly for the purpose of attracting the public, and then having gotten them in, try to sell them an unknown product of doubtful value.

Guessing Demand

Another idea along this same line is the assumption that they can control the demands of the thousands of motorists by obtaining exclusive contracts on well-known brands of oil for the purpose of throttling or controlling their sale, feeling that if they have exclusive contracts on all the oils that are in popular demand that they can eventually crowd them out of the market. To say that this policy is short-sighted is expressing it mildly, because the thought behind it is not based on a sound business building principle.

You cannot satisfy the public by attempting to change their natural desires for a certain product to something else. Particularly when that something else has been selected more for the price at which it can be obtained than for the value it will render to the purchaser.

What has dominated the policy of many retail oil companies? Has it been price or sound business judgment? Much thought is often given to the selection of a name, but no thought whatever to the selection of a product that is to be sold under that name.

The dominating principle is: "How cheap can I buy it?" and "How much can I sell it for?"

So much money has been put into this program of expansion and wasted overhead that the retail oil men may feel they must make more profit on a single gallon of oil for the mere action of serving it than the total cost of taking that gallon of oil from the ground, refining it and transporting it half way across the country to the market.

Expansion and overhead expenses that force such a terrific raise in prices for the mere act of serving is not founded on a durable foundation.

Service an Abused Word

Much has been said about service. It is perhaps the most abused word in the English language

Many filling station operators do render good service—unusually good—but service alone will not attract. There of necessity must be a well-balanced combination of sound merchandise and sound merchandising principles plus service.

Marshall Field & Co. has an international reputation, but would they have this reputation simply for the courteous service they render? No, indeed. They do not even talk about their service. They talk about quality merchandise, honest values, and then back that up quite naturally with the proper kind of service.

And right there we might say why didn't Marshall Field, when he wanted to increase his business, establish a miniature Marshall Field store in every neighborhood? He did not because years ago it was well recognized that people would go regardless of distance to the place that had a reputation.

Now, what are we going to do about the present situation? We can't keep up this unreasonable building and expansion work. We can't keep spreading out, increasing our investments and continue to pay our attendants a full day's wages for one-third of a day's work.

We cannot afford to compete with the bigger companies whose policies are to bring their products direct to the public, but we can do many things that they cannot do.

Merchandising Methods

We are not tied as they are to one definite line of merchandise, although I might say right here that sometimes we wonder just what the words "independent oil company" really mean, because there are some of us here today tied hand and foot through lease and license and other means who have been induced to carry on big expansion programs on the thought that they were increasing their gallonage—and perhaps they were but they had not always increased their profits and they are so tied that they cannot decide for themselves what merchandise would be the best for them to handle in their places of business.

Such concerns must lack the individuality that is so necessary to build into any business because they are dominated by the broader policies of those who control them. They again are deprived of the opportunity to build an individual good will because their identities are more or less obscured by the products they handle and they are building good will—for whom?

Some of us at least have found out that their time and effort had been spent in building the good will for the other fellow whose gasoline they handled and

(Continued on Page 107)

*Before American Oil Men's Association, Chicago.

GULF TO LAY 405-MILE PIPE LINE TO WEST TEXAS. COST $9,000,000

By P. L. McGreal

HOUSTON, Tex., Apr. 18.—The Gulf Pipe Line Co., a subsidiary of the Gulf Refining Co., and allied interests, has started preliminary work on a line from Ranger, Tex., westward to Midland, and thence to the Upton-Crane and other west Texas fields. It will be a 10 and 12-inch line and the cost is estimated at $9,000,000. The extension from Ranger to west Texas and from Weatherford east to Lufkin will be 405 miles. Lufkin, in Angelina County, is the point where the present lines from Oklahoma, north central Texas, east central Texas and Louisiana converge, and run to the big refinery of the Gulf company at Port Arthur.

Surveys are now being made and rights of way being secured. The pipe has been ordered from eastern mills and bids on pumps, engines and other equipment are being considered.

Capacity 35,000 Bbls.

The capacity of the line will be from 35,000 to 40,000 bbls. per day, the future development and possibilities of the west Texas region having been taken into consideration.

The completion of this line will give the company's system a total capacity of 110,000 bbls. Approximately 340 miles of the new line will consist of screw pipe and on the balance couplers will be used.

The Humble Pipe Line Co. has changed the starting point of its West Texas-In- The route is more easterly than the original plan to avoid some of the rough country and deep canyons.

Locations for stations on both the Gulf and Humble company lines are undetermined as yet. The Gulf company has a tank farm at Midland with four tanks of 55,000 bbls. each in service, and six 80's being erected. It has been shipping out crude in tank cars.

MAGNOLIA ANNOUNCES ANOTHER PRICE CUT OF 10 CENTS BARREL

The Magnolia Petroleum Co., effective April 20, announced a 10-cent reduction in its prices on crude oil in the States of Oklahoma, Kansas and Texas where it buys on a gravity basis. The company on April 7 announced a 15-cent reduction in its schedules.

The reduction of April 7 had not been met by other major companies at the time the latest reduction was announced. Under the latest schedule, the Magnolia Petroleum Co. pays 95 cents for crude under 33 gravity with a differential of 2 cents per barrel between each degree of gravity beginning with 33 to 33.9 at 97 cents and ending with $1.35 for 52 and above.

Mexico Estimated Too High This Year

Blardone Believes It Will Not Produce More Than 60,000,000 or 65,000,000 Bbls. Reviews Record of 1926

By George Blardone
Staff Correspondent, Mexican Fields

TAMPICO, Mexico, Apr. 15.—Production of petroleum in the Mexican republic during the year 1926 can be placed at 90,112,837 bbls., a decrease when compared with production figures for 1925, of say, 25,828,002 bbls. Both the north and south fields of the Tampico-Tuxpam embayment registered sharp declines in 1926, but in the Isthmus of Tehuantepec an increase of something over 1,000,000 bbls., as compared with 1925, resulted. Leaving aside the comparatively small Isthmus production, it might be remarked that so far as the Tampico-Tuxpam fields (Mexico's petrolific mainstay) are concerned, there is practically no more reserve production for anyone, producing wells being exploited for all they can produce under conservative field practice. Indeed, the one company that has always had actual production in reserve commenced, in a small way, to import Venezuelan crude for mixing purposes at its refinery at this place before this present year was scarcely a month old.

Of the total production for 1926, consider the following: Northern fields (heavy oil district) produced during the year 57,948,327 bbls., a decrease from its 1925 production of 20,242,206 bbls.; southern fields (light oil district) produced in the same period 30,854,910 bbls., a decrease from its 1925 production of 6,547,116 bbls.

Reduced to a table the following is obtained:

	Bbls.
Northern fields	57,948,327
Southern fields	30,854,910
Isthmus of Tehuantepec	1,309,600
Total 1926	90,112,837
Total 1925	115,940,839
Decrease 1926	25,828,002

Distribution 1926

The distribution of production for the year under discussion comes under the headings of exportations and domestic consumption, the latter, of course, including field and refinery uses and losses. First, it will be necessary to consider that with a total production of 90,112,837 bbls. in 1926, there was added thereto, say, 5,228,411 bbls. of oil withdrawn from storage during the year. Wherefore, there was made available for distribution actually 95,341,248 bbls. There was no crude imported during 1926 to supplement this last total. The distribution table follows:

	Bbls.
Visible exports	78,447,000
Domestic consumption, etc.	16,894,248
Total (to balance)	95,341,248

In explanation of the term "visible exports" suffice it that in the vessel movements from Mexican ports of primary clearance, i.e., Tampico and Tuxpam, there was perforce included, say, 3,547,518 bbls. cleared "coastwise." Some of this coastwise movement went to Mexican Eagle Oil Co.'s refinery at Minatitlan, where a part of it undoubtely was eventually cleared for export. The figures for such a movement are not available at this writing. This will necessarily advance the real export figures somewhat at the expense of the domestic consumption column, but such a change is merely academic.

Vessel Shipments

Vessel shipments during 1926 from Tampico and Tuxpam (Port Lobos is no more, having been officially closed in 1925) totaled 81,994,518 bbls., a decrease when compared with the 1925 maritime movement of, say, 18,866,421 bbls. Tampico dispatched 81,206,553 bbls., with Tuxpam clearing the remainder, 787,965 bbls. This vessel movement contemplated the following: Crude, 37,791,538 bbls.; topped crudes (fuel oil), 33,895,005 bbls.; refined oils (principally gasoline), 6,458,818 bbls.; asphalt, 106,010 bbls., while an item of bunkers, totaling 3,743,147 bbls. is added to balance, or, say, 81,994,518 bbls.

The division of this movement is as follows:

	Bbls.
*To United States	55,880,785
†To Cuba and West Indies	11,400,739
Mexican coastwise	3,547,518
United Kingdom	2,706,477
South America	2,014,388
Central America	1,101,738
Canada	763,136
Continent	634,305
Panama	134,163
Asia	43,028
South Africa	25,094
Bunkers (to balance)	3,743,147
Total	81,994,518

Note—*Includes Insular possessions. †Includes many cargoes cleared to Nassau "for orders," much of which undoubtedly was recleared for the Continent or the United Kingdom.

Field Operations

The falling production curve in 1926 can not be charged to the drill. The year saw actually more wells drilled to completion than in any other previous year in the republic's petrolific history. True, wildcatting was not a feature; but the older proven areas were carefully combed. The following table tells its own story:

	Completions	Initial Producers
Northern fields	707	219
Southern fields	95	41
Isthmus Tehuantepec	28	18
Total 1926	830	278
Total 1925	806	255
Increase 1926	24	23

The initial production of the wells that were finished as producers is of no moment, for initial production of the completions, considered as a whole, fell off so quickly that what was "head production" today was easily very much less tomorrow, if indeed the well was not shut in altogether. In other words, the steady withdrawals from the existing proven fields has so depleted them that the water levels are constantly rising. The effect upon production has been that January, 1926, was the peak month of the year with some 9,500,000 bbls., and from then on, despite the drill, the curve slowly but steadily descended until December found it at the 6,000,000-bbl. mark. It holds now in the 5,000,000-bbl. column.

The one wildcat of the year that has proved of any worth at all was drilled in the Los Esteros, Canton of Altamira, Tamaulipas. It came in at 1,492 feet, a very shallow San Felipe well, that showed first for 1,000 bbls. and then increased to about 8,000 bbls. It continues to produce at 1,500 bbls. The company owning this well immediately drilled four offsets all around it; result, four perfectly good dry holes. South of this, say some 3 miles or more, another well in the Canton of Altamira, was brought in shortly afterwards that looked as if it was going to be good for 5,000 bbls., but dropped at once to 400 bbls.; and is now only good for fuel. Persistent drilling in juxtaposition to it has thus far resulted in nothing.

In the south fields, the test, No. 3 La Pita, west, a little south of the Alamo Pool, which was watched with interest, was a dry San Felipe hole at 6,554 feet, the deepest test for oil yet drilled in Mexico.

During the first half of the year no less than 13 wildcats were drilled to completion, ranging from Canton Altamira in Tamaulipas on the north to just above the old Furbero Field well south of the Tuxpam River, without result.

Isthmus Activities

It will be noted that the Isthmus of Tehuantepec and two other states in south Mexico drilled 28 wells to completion during the year. All of these wells save two were drilled by Mexican Eagle Oil Co., Ltd., and it had the felicity to drill 18 of them into production. The

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Pressure Control in Flowing Wells

Lengthens Flowing Period, Increases Daily Output and Ratio of Oil, and Decreases Rate of Decline

By R. R. Brandenthaler*
Petroleum Engineer, U. S. Bureau of Mines, Bartlesville, Okla.

Controlling the pressure under which a well produces crude oil has advantages that are apparently not entirely realized by many operators in the Mid-Continent district. The possibilities of utilizing well pressures are indicated by a series of experiments recently completed by the Bureau of Mines in which pressure control was successfully applied to 20 wells in the Davenport Field. The flowing period of all of the wells was lengthened; in some instances it was more than doubled. The daily oil production from approximately one-half of the tested wells was increased. The amount of gas produced per barrel of oil was decreased, and this, in addition to a slower rate of decline in production, indicated that the ultimate recovery had been increased.

The successful application of pressure control to flowing oil wells must take into consideration the relationships existing between pressures in the different parts of the system which, though not equal, are nevertheless more or less interrelated. These relationships, which have such an important bearing on the results obtained by applying pressure control, are as follows:

Results Obtained

A change in rock pressure will affect the tubing pressure, casing pressure, and differential pressure, but it will not affect the trap pressure.

A change in tubing pressure will affect the differential pressure and casing pressure; also, a change in casing pressure will affect the tubing pressure and differential pressure.

Trap pressures are not affected by rock pressure, casing pressure, tubing pressure, or differential pressure, unless the traps are required to handle gas and oil beyond their capacity.

Trap pressures will affect the differential pressure, tubing pressure, and casing pressure and any changes at the wellhead, whether differential pressure, tubing pressure or casing pressure, will affect the pressures in the well.

Any change in rock pressure results in a change in the tubing pressure, casing pressure, and differential pressure.

When any sudden or unusual change in well-head pressures occurs (for example, an erratic tubing pressure), and when a sudden decrease in oil or gas takes place, it is always advisable to note whether the trap pressure has changed. If the trap pressure has not changed, note whether the oil line from the trap to the flow-tank has become clogged, as would be evidenced by a rise in the oil level in the trap. If the oil line is functioning properly, and if the trap pressure has not changed, the flow-line from the well to the trap should be inspected. If it is free from obstructions, then changes in the differential pressure, tubing pressure, and casing pressure must be due to changed well conditions.

Fluctuations in trap pressure, providing the traps are not overloaded, are due to fluctuations in pressure in the gas line leading from the trap.

Six Months' Tests

Tests were conducted over a period of six months, April to October, 1926. Bureau engineers supervised the installation of equipment and attended to the experimental work dealing with the tests; also kept a record of all available data. At least one engineer was stationed in the field at all times. In accordance with the general practice in all Mid-Continent fields, the gas and oil were allowed to flow through the casing. Later, when wells began flowing by heads, or when they stopped flowing entirely, tubing was run into the well. Sometimes a packer was set opposite the bottom joint of casing. The wells were allowed to flow, were agitated, were "pumped off," or were pumped for a part of the day and allowed to flow by heads the rest of the time. The method depended on the condition of the well and the policy of the company. The general field practice was to produce several wells into the same trap, hence very few individual well production measurements were made. The difficulty of obtaining individual well measurements accounts for the lack of considerable data which would have made it possible to give the results of the tests in greater detail.

The field underground conditions have been described in detail in an engineering report on the field by R. R. Brandenthaler, K. C. Sclater and H. M. Kent. Only a brief summary of these underground conditions, bearing on the results of pressure control as applied to flowing wells, is given here. All tests were conducted on wells producing from the Prue sand. The Prue sand, which is the main producing sand in the field, lies at depths of 3,250 to 3,400 feet below the surface, and ranges from 30 to approximately 110 feet in thickness in the productive area. Numerous laminae of shale are interspersed through the sand. These are not continuous and apparently do not always parallel the bedding planes of the sand. Some samples of Prue sand contained

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*Presented before the Tulsa Section, A. I. M. E. Published by permission of the Director, U. S. Bureau of Mines.

Testing Diesel Engine in Motor Trucks

Experiments Recently Conducted at San Francisco Increasing Interest in Automotive Possibilities

By L. M. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

With experiments recently made in San Francisco with the Diesel engine in the heavier type of motor truck interest in the possibilities of this type of engine promises to continue on the increase during the coming year. The economic effect of the successful development of a light Diesel engine to supplement or supplant the present internal combustion engine in automobiles is recognized as one of the most important in its future bearing on the industry.

According to authorities, the automobile engine of today converts only about 5 per cent of the fuel energy consumed in actual performance, the balance being consumed in overcoming friction, wasted heat, etc., having to do with the mechanical working of the engine. With the raising of the gravity of gasoline and the reduction of the endpoint, together with the mechanical improvements in engines and the trend toward higher compression ratios, the efficiency of the automobile engine, in effect, is being increased and there is a definite advance toward increasing gasoline mileage.

Just as this is to a great extent a process of evolution, it is also true that the development of the Diesel engine in the automotive field will be evolutionary, although its first introduction on any considerable scale will have revolutionary characteristics. In the first place, the Diesel engine promises to be one of the most effective developments in prolonging the life of the petroleum supply.

Prolongs Petroleum Supply

According to the report of the Committee of Eleven, this type of engine, if successfully developed to take the place of our present popular gasoline engine, by the elimination of excessive weight, increased flexibility in handling, etc., would have the effect of multiplying the available supplies of motor fuel six times, provided that the motor fuel used was extracted from some form of crude oil. The popular gas engine now utilizes about 25 per cent of the crude, whereas the Diesel engine would utilize 100 per cent of the crude, and the gas engine has only approximately two-thirds the thermal efficiency of a Diesel engine.

A summary of the possibilities of Diesel development shows that in railway operation, the Diesel engine will be generally adopted in the next 50 years. It is estimated that 15 per cent of the railroads are now electric, and it is believed that by 1975 all locomotives will be electric. Another great expanding field for the Diesel engine is industrial where the use will be prevalent, except in cases where hydroelectric power is available. At the present time 57 per cent of all shipping under construction for United States owners is to be Diesel equipped. It is estimated that all fuel oil burning vessels will be transformed to Diesel equipment at a rate that will result in a complete Diesel-driven merchant marine and navy by 1965.

The experiments with the Diesel motor in San Francisco were made with a 1915 Holt "75" tractor engine installed in a 10-ton Fageol chassis. The magneto and spark plugs were removed and a pump and spray nozzle were installed and this truck with a 5-ton cargo covered the distance from Los Angeles to San Francisco at an average speed of 10 miles per hour and consumed only 37 gallons of stove oil, costing a little more than $2.

Progress in Germany

Experiments of this type have been going on in Germany for a number of years and automobiles, motor trucks and even motorcycles, have been equipped with the Diesel engine. At the present time there are about 4,000 motorcycles operating in Germany using a single cylinder Diesel engine of about seven to nine horse power and satisfactory tests have also been made on the Diesel engine installed in the lighter-than-air airship.

According to O. Berg, Jr., of the Union Oil Co. of California, since its invention by Dr. Rudolph Diesel of Germany in 1892, the Diesel engine has been tested in all types of installations varying from the submarine to the oil electric locomotive and motor truck.

Besides economy of operation the Diesel engine has other advantages over the steam engine. Full power is quickly available and the engine can take on full load from idle as soon as the operator can make the different shifts, a matter of two or three minutes. The Disesel engine has no standby losses, as with the stopping of the engine no further fuel is consumed. It also possesses the further advantage of being a self-contained prime mover, its only auxiliary being the air compressor. The small requirements of the engine reduces to a minimum the space necessary for fuel storage, which in marine installations makes possible greater cruising radius on a given quantity of fuel. An interesting example of this is the M. S. Aorangi. This vessel which is the largest motor ship afloat, is 600 feet long and of 23,000 tons displacement and has a cruising radius of 15,000 miles; bunker space being provided for 21,000 bbls. To obtain the same cruising radius with steam, using oil for fuel, it would be necessary to provide bunker space for 60,000 bbls. or with coal fuel, 15,000 tons. It is interesting to know that this ship which is on the Australian run of the Canadian Royal Mail Line of the Union Steamship Co. of New Zealand is under contract with the Union Oil Co. for all her Diesel requirements.

She will not long be known as the largest motorship afloat, however, as two vessels, the "Carnarvon Castle" and the "Asturias" have been launched and are now at the outfitting docks and will eclipse her tonnage and power. Another motorship, the "Saturina," recently launched, will, when completed, be the largest and highest powered motor vessel in the world. She is being built in Italy and is 631 feet in length and is capable of carrying 3,000 passengers. Among the many novelties proposed for this vessel is the absence of funnels, and accommodations for seaplanes. Each of the two Burmeister & Wain double acting Diesels normally develop 9,000 shaft horsepower and 10,000 shaft horsepower when supercharging blowers are brought into operation.

This is surely rapid development for the motorship when it is taken into consideration that all of these vessels are larger than any steamer having San Francisco as a regular port of call with the exception of the occasional around the world liners.

Only recently the M. S. Olinda, which was in the fuel oil service of the Union Oil Co. at San Francisco, has been converted to Diesel drive. She is now powered with a 250 horsepower Enterprise Diesel engine which drives her one knot per hour faster than the old 300 horsepower gas engine.

Besides an increase in speed, there is also quite a reduction in operating cost. With gasoline for fuel it costs about $4 per hour to run full speed. With her Diesel engine she can now attain a speed of one knot faster at a cost of 72 cents per hour, a saving of $3.28 per hour in fuel.

The adaption of the Diesel engine to marine propulsion can be readily seen when these figures are taken into account. In Denmark 94.5 per cent of the tonnage building is Diesel and in Sweden 92 per cent. Italy's construction shows 63.5 per cent motorships and Germany rates 77 per cent with Holland 63 per cent and Japan 46 per cent.

According to Lloyd's, the figures for the quarter ending June 30, 1925, compared with the same period for 1924, show an increase of 39 per cent in motorship tonnage and a decrease of 32 per cent in the steamer tonnage under construction. When compared with the tonnage under construction, in June, 1923, this year's figures show a decrease of 50 per cent in steamship and an increase of 180 per cent in motorship building.

Why Europe Has Led

Several reasons are apparent as to why Europe has led America in development of the Diesel:

First: The general business profits in America having been so large in the last decades, little thought was given to the most economical methods of production and operation. Also competition with the industrial countries of the world was not as keen as in Europe.

Second: Coal is much cheaper in the United States than in Europe and consequently is more wastefully used; while the leading idea in Europe is economy in operating cost, the leading idea in the United States is economy in first or installation cost.

Third: The steam engine in America is much cheaper than abroad, but the Diesel engine, due to its many working parts, is not and never will be a cheap engine.

Fourth: With the existing surplus of steam tonnage in America which can be purchased at very attractive prices, it is not probable that shipowners will install Diesel engines in new tonnage at the present cost.

Fifth: The majority of the Diesel engines, particularly the larger units manufactured in the United States, are under European license, which naturally retards development in this country.

However, arrangements are now being made and contracts have been let for the conversion of 18 United States Shipping Board vessels from steam to the Diesel engine under an amendment to the Merchant Marine Act providing a fund of $25,000,000 for this purpose. In addition, $25,000,000 will be set aside annually for a five-year period to assist individuals and private shippers interested in the construction of new vessels designed for Diesel propulsion.

Despite the fact that this engine originated in Europe, America is credited with the adaption of the Diesel engine to electric drive which has brought about the development of the oil electric locomotives, of which four are in operation; and if service performance equals the demonstrations, many steam locomotives will be replaced. The electric drive used in this locomotive protects the engine from the strains and shocks that a steam engine would have to contend with because of direct drive. More traction is also obtained with the oil electric locomotive as it is possible to deliver the exact amount of energy necessary to turn the driving wheels at the prescribed speed. With the oil electric locomotive, water towers as used by steam roads are unnecessary as are the many transmission lines and power plants of the present electric roads.

It is said that the oil electric locomotive can exert the same amount of effort as the steam locomotive at one-third the operating cost.

CHEMISTS DISCUSS POSSIBILITIES OF PRODUCTS FROM PETROLEUM

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

Convention picture will be found on pages 156-157.

RICHMOND, Va., Apr. 16.—When the seventy-third meeting of the American Chemical Society ended, members of the division of petroleum, chemistry, and gas and fuel chemistry, expressed their convictions that, from this time forward, the work of chemist in the oil industry would be pursued on a much broader plan than ever before.

"Formerly, the oil industry was a field of operation for the engineer," said a distinguished chemical engineer who was attending the meetings of the petroleum division, although not a member of that division. "Now," he added, "the petroleum industry is being opened up as a field for the chemist."

The idea prevails among many chemists that in the past the petroleum industry has been controlled largely by rule of thumb, and only now is it beginning to appreciate the necessity of having a better knowledge of petroleum to work out its uses, as in the case of other branches of organic chemistry, working in the fields of dyes, rubber, and many other products.

The first paper read before the division of petroleum chemistry by E. E. Reid, and prepared by him in collaboration with P. Borgstrom of Johns Hopkins University, on "the sulphur compounds that have been found in petroleum" created a very profound impression. This paper treated of the fundamentals of scientific facts on which the petroleum industry should be founded. It was a compilation of the literature on sulphur compounds which have been isolated from petroleum in different parts of the world. They gathered approximately 35 references. This indicates the slight amount of work that has been done in a period of 70 years in obtaining knowledge of petroleum technology. It is a sad commentary upon the activity that has been pursued in this respect, it was declared, when it is considered that over 300,000 synthetic substances have been produced and analyzed from coal tar alone. In other words, the technology that has been bestowed upon petroleum is but a trifling percentage of that which has been devoted to coal.

Importance of Problems

The papers read before the petroleum division on the sulphur problems of petroleum oils showed that their authors realized the extreme importance of these problems, due to the fact that it is not known just what sulphur hydrocarbons there are in petroleum, particularly in cracked products. Fundamental research, it was insisted, calls for a knowledge of

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Gas Flow Through High Pressure Lines

Formulas for Use in Designing Lines Discussed. Problem Being Considered by Government and Gas Association

By E. L. Rawlins*
United States Bureau of Mines

The purpose of the study of the flow of natural gas through high pressure transmission lines is to obtain information that will help the operating companies in designing their pipe lines and determining the capacity effects under different operating conditions in order to secure more efficient operation. The study is being carried on by means of a close co-operation between the Natural Gas Association of America and the Bureau of Mines.

The study of this problem was started several years ago by the Natural Gas Association when the Main Technical and Research Committee of the association instructed the transportation committee, a subcommittee of the main committee, to gather in convenient form all of the existing data that related to gas pipe line flow formulas and gas compressor specifications. The members of the transportation committee then made a careful review of all of the existing pipe line flow formulas and also of all available information relative to compressor capacities. Each member of the committee submitted an individual report. The information contained in these reports indicated that at least eight different formulas had been developed and applied to the calculation of pipe line flow. In each of these formulas, the deciding factors that influenced the flow of gas through the lines were as follows:

(1) Quantity of gas flowing.
(2) Absolute inlet pressure.
(3) Absolute outlet pressure.
(4) Diameter of the pipe.
(5) Length of the line.
(6) Specific gravity of the gas.
(7) Factors for correction of pressure and temperature of standard conditions.
(8) Calibrated constant to correct for variation due to operating conditions.

Calculations Made

Several sets of calculations were made with assumed values of these factors. The assumptions were made in such a way that widely different conditions of operation were represented. The flows as calculated from each of the formulas under each of the different operating conditions then were compared and a variation in the results were noticed.

In order to understand better the scope of the work contemplated by the committee and the methods o carrying it to completion, a brief summary is given below of the data and information relative to pipe line flow that was put into report form by the various members of the committee.

After studying these data, the members of the transportation committee decided that the part of the transportation problem relating to pipe line flow should not be limited to simply a codification of the existing data and formulas, but that actual field tests should be conducted on as many operating lines as necessary to represent all operating conditions that would affect the factors in any pipe line flow formula.

The Bureau of Mines is represented on the transportation committee and also is vitally interested in the pipe line flow formula work. It was decided, therefore, that the association and the bureau should co-operate in working on the problem; the bureau to consider it one of their major problems which should be completed as soon as possible. The field work is being done by two Bureau of Mines engineers and one engineer of the association. The transportation committee is kept in close touch with the progress of the work and future plans for carrying it forward; and offers helpful suggestions and makes constructive criticism as the work progresses.

*Before meeting Southwest Division Natural Gas Association of America, Dallas, Tex.

Weymouth's Formula

Basically derived from Unwins formulas, which is

$$U = \sqrt{\frac{gCTM}{fl}\,\frac{(P_1^2 - P_2^2)}{P_1^2}}$$

U = initial velocity, feet per second.
g = acceleration due to gravity.
C = thermodynamic constant of the flowing gas $= \frac{PV}{T}$
T = absolute temperature of gas.
M = hydraulic mean radius of pipe = 0/4
P = absolute initial pressure of the gas Lbs./D"
P = absolute final pressure of the gas Lbs./D"
f = coefficient of friction.
l = length of line, feet.

Coefficient of Friction

Experiments on air flow in pipes of different diameters indicate that the coefficient of friction f is a variable, decreasing with increasing diameters of line. The curve is represented approximately by the equation,

$$f = \frac{0.008}{\sqrt[6]{d}}$$

Experimentation on coefficient of friction shows that drop in pressure due to friction is

1. Almost proportional to the square of the velocity
2. Proportional to density.
3. Proportional to amount of rubbing surface.
4. Dependent on the roughness of the surface in contact.

Various experimenters from Darcey in 1857 until the present time have found wide variations under different conditions.

Mean Hydraulic Radius

The term "mean hydraulic radius" is often used to express the resultant effect of friction. Its significance is as follows:

The area of resistance which opposes flow is equal to the surface area exposed to the gas or is the length of the pipe times the perimeter. The working pressure to cause the flow is effective over the entire cross-section of pipe. If the diameter is increased, the frictional resistance increases with the perimeter, and the amount of flow increases with the area of the pipe. Therefore, the effect of friction over flow decreases in proportion with the ratio of the cross-section to the area in contact. This ratio is simply

$$\frac{\text{area}}{\text{perimeter}}$$

When the length of pipe, in proportion with the effect of friction increases, is divided by the length of its mean hydraulic radius, in proportion with which the effect of friction decreases, the result is an abstract number representing the resultant effect of friction. For circular pipe, the mean hydraulic radius is simply $\frac{d}{4}$

Formulas

The final form of Weymouth's formula is

$$Q = 37\ \left[\frac{(P_1^2 - P_2^2)\ d^{5\frac{1}{3}}}{L}\right]^{\frac{1}{2}}$$

where the gas standard conditions of measurement is 60 degrees Fahrenheit and 14.65 pounds absolute pressure and a flowing temperature of 40 degrees Fahrenheit.

Pipe Line of Several Lengths

If a pipe line is composed of several lengths of line, L_1, L_2, L_3, etc., Ln of diameters d_1, d_2, d_3, etc., dn each length must be transformed into an equivalent length of one diameter. The formula is

$$L'n = Ln \left(\frac{d'n}{dn}\right)^{5\frac{1}{3}}$$

The equivalent lengths added together gives:

$$L = L'_1 + L'_2 + \text{etc.}$$

which is the value of L in the flow formula. Curves can be made to represent the equivalent lengths for different diameters of pipe and help to facilitate calculations.

Looped Systems

In looped systems, which involve complicated calculations, it is necessary first to transform the individual pipe lines making up the system into respective equivalents having a common length. The equation

$$d'n = dn \left(\frac{L'n}{dn}\right)^{\frac{5}{16}}$$

is used for this purpose. A summation then is made of these equivalent diameters to be substituted in the pipe line flow formula. The summation takes the form

$$E\sqrt{d^{5\frac{1}{3}}} = \sqrt{do^{5\frac{1}{3}}} = do^{\frac{8}{3}} = Ed^{\frac{8}{3}}$$
$$do = [Ed^{\frac{8}{3}}]^{\frac{3}{8}}$$

If the entire line consists of other sections of similarly composed looped lines, the equivalent single diameters of each section can be determined and the section then reduced to an equivalent length of some conveniently chosen uniform diameter. These equivalent lengths added together will give a line of uniform diameter of single pipe equivalent to the actual looped system. Curves can be established and drawn to facilitate calculations.

Storage Capacity

The term "storage capacity" as applied to a pipe line means the excess gas, over and above the average rate of supply, that can be packed in the pipe line during the period when the demand is less than the supply. Since this supply rate is the average daily delivery and since the volume of gas in the line is a function of the pressure, in order to determine the storage capacity, it is necessary to determine the total content of the line under the variable pressure conditions. The storage capacity is the difference between the packed condition and the unpacked condition of the line.

The unpacked condition of the line is obtained when the gas is flowing at the average daily rate. When the consumption is below this point excess gas is being stored. This point then represents the lower limit in the daily delivery rate.

The packed condition of the line is such that the intake pressure is at its maximum point as fixed by safety, pressure limits, etc., and the flow is a mean between the minimum and average rates for the day.

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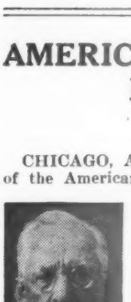
AMERICAN OIL MEN'S ASSOCIATION HEARS TRADE TOPICS DISCUSSED

By J. B. Waldo

CHICAGO, Apr. 16.—The convention of the American Oil Men's Association, held at the Congress Hotel in Chicago April 12-14, inclusive, was successful in many ways. The topics were well chosen for their interest to the oil jobber, were well handled and of a practical, helpful nature. The number registering was about the average of such meetings. Some of the jobbers complain of the time they have to give to meetings. If they attend them all, including their state meetings, it takes too much time from their business. Several said their state meetings were really of more value to them as most of their immediate problems were local or state.



The movement started by the joint meeting of the officers and directors of the national association and the presidents and secretaries of the state organizations may develop a better co-operation between the state and national groups. There is really a logical plan in the idea of the state associations attending to state matters and the central association caring for questions having a bearing on the nation-wide industry. Some of the other industries are organized along this plan. In at least two and probably more, the national body is made up of delegates from the local and state organizations. This plan works well with these organizations and does not prevent them from holding at least one very successful and largely-attended nation-wide convention each year. A question is, is not that place for a great national organization really filled today by the American Petroleum Institute and could not its influence for the good of the industry be increased by a wider recognition of the existing state and local associations in the industry?

The final day's session was, according to the announcement of the management, "planned to promote a greater spirit of co-operation among refiners, carload marketers and jobbers (bulk station distributors.") The list of speakers and

ALBERT S. CLOSE
Secretary and treasurer, Hickox Producing Co., Toledo, Ohio, elected president of the American Oil Men's Association.

(Continued on Page 157)

New Organization Big Aid to Gas Men

Large Attendance and Great Interest Shown at Dallas Meeting Augurs Well for Success of Southwest Division

By James H. Dameron
Staff Correspondent

DALLAS, Tex., Apr. 16.—Natural gas men from Oklahoma, Kansas, Texas, Louisiana and Arkansas, comprising the Southwestern Division of the Natural Gas Association of America, closed their two-day session here Wednesday after completing a program replete with interesting and thoroughly discussed papers and question discussions. The more than 200 attending the meeting hastened to vote for the holding of a similar meeting early in the fall.

N. C. McGowen, of the Palmer Corp., Shreveport, La., and vice president of the national association, presided at the meeting and told the members it was the hope of the divisional officers that the Southwest Division would have 500 new members before the national convention is held in Cincinnati, Ohio, in May. George McQuaid, secretary, said 150 new members had been added since the division was formed less than a year ago. An active campaign is being started to swell the member list to 500.

Because of vacations interfering and because of the inopportune time after the national convention, it was decided to hold the next meeting early in the fall instead of during the summer months. Where the next meeting is to be held will be decided upon by a committee at a later date. Mr. McGowen pointed out that it was the intention of the divisional members to rotate in selecting cities in which to meet so as to cover every important gas center in the division approximately once each two years.

Dallas Wants Convention

While no action was taken on the floor a movement was launched in Dallas to bring the 1928 national convention to that city. Divisional members attending the meeting were favorable to the movement and Dallas Chamber of Commerce officials, alert to the movement, started laying plans in that direction. They expect to organize members of the division to aid in bringing the next national convention to that city.

Gas men evinced an avid interest in all of the papers read before the meeting and in the questions brought up for discussion. Members were warm in their praise for the success of the meeting and declared it one of the most beneficial they had attended. Their interest was proven by their close attendance.

Mr. McGowen said when the division was organized less than a year ago a survey revealed that 2,000 potential members were in the divisional territory and that 500 was set as the goal for the membership committee to turn in before the national convention. He pointed out the benefits to be derived by members who attended the meetings and told of some of the objects of the division and how it intends to promote in general the interests of the natural gas industry in all its branches. Mr. McGowen predicted a great success for the division and that the public as well as gas companies would benefit by the meetings. F. L. Chase, vice president of the Lone Star Gas Co., informed the body of the division's intention of organizing a technical and research committee. This committee will co-operate with the national committee but will not take up the study of any particular problem until after the close of the national convention of gas men. Mr. Chase also lauded the Bureau of Mines and Bureau of Standards for their aid and co-operation in helping solve many of the major problems of the gas industry that involved long and diligent research work.

E. A. Clark, of the Oklahoma Natural Gas Corp., read the first paper of the meeting, on "The Trend of Gas Measurement."

Curb Box Discussion

His paper was published in The Oil and Gas Journal of April 14. When it was opened for discussion by the delegates considerable interest hinged around curb boxes. One company has around 3,000 curb box meters in use, some of which have been in use more than three years, and are proving satisfactory. No trouble has been experienced in freezing and no trouble from sweating. It was brought out there is no place for moisture to collect unless the outside glass is broken. While the initial cost is greater the savings in other directions overcome that, one delegate pointed out.

Most of those taking part in the discussion were of the opinion that most any covering for the meters would do but the best coating is still being sought and that several new types of meters are now being tested. One delegate expressed the belief that half of the surface line leakage could be eliminated by curb box meters.

The gas line from Monroe, La., to Alexandria, La., was an example used in discussing moisture that went through the gas lines. To eliminate any troubles caused from freezing valves a trap is installed on the outlet trap pipe of meters and has so far proven successful.

The increasing demand for connections on high pressure lines in the outlying districts came up for discussion and two methods for connections seems to be popular. One is installing a meter and regulator in a steel barrel and the other is to install separate boxes for the meter and regulator.

A paper on building the house heating load by F. M. Rosenkrans, new business manager of the Gas Service Co., Kansas City, Mo., revealed many interesting facts. It is published on page 74 of this issue.

Rawlins Reads Paper

The paper by E. L. Rawlins of the United States Bureau of Mines at Bartlesville, Okla., dealt with "Pipe Line Flow Formulas." In the outset, Mr. Rawlins explained the paper was one explaining the outline of an exhaustive study now being made of the flow of gas through high pressure lines to obtain information that is expected to aid operating companies in designing their lines. Because no tangible results have thus far been obtained his paper was closed to discussion.

Leading a discussion of "Co-operation with Regulatory Bodies," B. P. Stockwell of the Oklahoma Corporation Commission told the members that they would obtain the best results by co-operating with state bodies and making them understand the gas man's problems. He asked the gas men not to expect too much from such commissions because those commissions are not as familiar with gas problems as men who have studied them for years. He asked the question: "Are we discussing our problems with the state regulatory bodies in the proper manner?" He urged closer co-operation and the result would be that the public would have a better understanding of the particular problem. He also urged the gas men who had a rate case before their respective state commissions to appraise their property at a rightful figure and stay with that figure and prove it was right instead of making a high appraisal and then cutting it down as has been done in some cases to his knowledge. R. D. Parker of the Texas Railroad Commission spoke brief-

(Continued on Page 90)

REGISTRATION AT DALLAS GAS MEETING

REGISTRATION, SOUTHWEST DIVISION OF THE NATURAL GAS ASSOCIATION, APRIL 12-13, 1927, DALLAS, TEXAS

Ackley, Levi, superintendent gas division, Independent Oil & Gas Co., Tulsa.

Banta, T. O., Lone Star Gas Co., Dallas.
Bartlett, J. W., superintendent of measurements, Houston Gulf Gas Co., Houston.
Baxter, John H., gas engineer, Oklahoma Gas & Electric Co., Oklahoma City.
Bay, Burt R., general superintendent, Empire Natural Gas, Bartlesville.
Berg, S. B., assistant auditor, Houston-Gulf Gas Co., Houston.
Bernie, C. O., foreman, Lone Star Gas Co., Ranger, Tex.
Bickel, L. A., manager, Dallas Gas Co., Dallas.
Black, J. W., clerk, Magnolia Petroleum Co., Dallas.
Blount, S. W., Jr., deputy supervisor oil and gas division, State of Texas, San Antonio.
Bollman, George H., Sun Oil Co., Dallas.
Breeland, A. W., chief clerk, Lone Star Gas Co., Dallas.
Brown, E. R., president, Magnolia Petroleum Corp., Dallas.
Bruns, J. M., sales manager, Barber-Greene Co., Aurora, Ill.
Bunn, George P., assistant superintendent gasoline department, Phillips Petroleum Co., Bartlesville.

Cardwell, Cecil W., district engineer, Lone Star Gas Co., Duncan, Okla.
Cary, Logan W., gas superintendent, Oklahoma Gas & Electric Co., Oklahoma City.
Chase, Frank L., vice president, Lone Star Gas Co., Dallas.
Chisholm, W. F., director minerals, department of conservation of Louisiana, Shreveport.
Clark, E. A., superintendent gas measurement, Oklahoma Natural Gas Corp., Tulsa.
Clevenger, Keith, director public service, Empire Natural Gas Co., Bartlesville.
Cox, R. O., technical assistant, Lone Star Gas Co., Dallas.
Crowder, M. W., chief engineer, Lone Star Gas Co. (Box 105), Joshua, Tex.
Crowe, J. M., district manager, Smith Separator Co., Tulsa.
Current, D. O., engineer, Lone Star Gas Co., Petrolia, Tex.
Cushing, W. T., Dearborn Chemical Co., Chicago.

Dameron, J. H., The Oil and Gas Journal, Tulsa.

(Continued on Page 100)

NATURAL GAS MEN HOLD SUCCESSFUL REGIONAL MEETING

Early arrivals for the opening session of the Regional Meeting of the Southwest Division of the Natural Gas Association of America held in Dallas, Tex., April 12 and 13. The Division includes members in Texas, Oklahoma, Kansas, Louisiana and Arkansas. Photo taken in session room of the Adolphus Hotel.

Peculiar Problems in the Rockies

Business of Leasing, Exploration, Development and Transportation Differ From Elsewhere

By Frank B. Taylor

CASPER, Wyo., Apr. 16.—The Rocky Mountain oil region comprises the States of Montana, Wyoming, Colorado and New Mexico, with Utah included if that State becomes important in the production of oil. The territory covers a strip of the United States from the Canadian border to the Rio Grande River. By reason of its topography and general altitude, also because of the scarcity of inhabitants, supply stores and carrier lines, oil field practices have been modified or changed considerably in some ways from usages in other oil-producing regions.

This region is, as its name implies, the region along the base of the Rockies. This great backbone forms a high ridge, runing north and south, on the eastern side of which extends a great plain, broken into foothills near the Rockies, and becoming gently rolling as it extends farther eastward from the base of the mountain ranges.

In among the foothills, and out on this plain as far as the States of the Dakotas, Nebraska, Kansas, Oklahoma and Texas, geologists find structural rolls that may contain petroleum. Eastward, still farther, the structural conditions are not so marked, and the territory is therefore not considered as promising. The nearer to the mountains, the more pronounced the structures become, so that the Rocky Mountain region is a paradise for the geologist, most of the structures being exposed so plainly that it is an easy matter for the experienced geologist to make surveys.

The pioneer oil men in this region had to bring in this equipment from great distances at tremendous costs, and were often hampered by a time limit. The oil, they found, had to be refined before it was marketable, which required more heavy investment; and a myriad of other obstacles were encountered that tended to delay for years the development of the territory.

The opening of the Mid-Continent and Texas region did more than any other thing to help the Rocky Mountain region in its oil development. Through the experience of the Mid-Continent oil men, the early Rocky Mountain companies were able to obtain a comprehensive view of this territory; and more than anything else, they were able to obtain equipment from the stocks in the Mid-Continent supply stores. Later, as this region developed its fields, supply houses became plentiful, and are now well along towards furnishing the needs of the operators, although the overhead of long haulage from the manufacturing points, and then another long haul, usually to some remote location, necessitates heavy first cost that operators in the more settled regions are not encumbered with.

The Rocky Mountain region has been developed in the main by large companies with sufficient financial backing to meet the heavy financial outlay. The matter of first cost has kept out individual operators, so prominent in other fields. Small operators have combined with others into firms or corporations that have backing sufficient for their needs. In a few cases, individual operators have been lucky enough to make a success.

When an oil company enters this region to prospect for petroleum, its first move is the employment of geological help in the search for structures. The larger firms usually have their own corps of men, but a large percentage depend upon consulting and field geologists who have their offices in Denver, Casper or Billings, besides some located in other places. Sometimes these geologists are sent out to explore and find structures, and sometimes the company has certain tracts offered, and directs a geological examination upon a definite area. The cost of a geological survey varies according to the amount of work done, and also to the detail. The cost of a geological survey is generally paid as a lump sum by contract, except, of course, where the geologist is employed on a regular salary. The charges run from $50 to $100 per day, depending on the class of work to be done, for good and experienced men.

The Leasing of Lands

After the geologist has reported favorably on a structure, the oil company proceeds to take title to the land if it has not already done so. If the tract is held by some dealer in lands, this is merely a matter of paying the purchase price and taking over. If the structure lies on Government land, the procedure is quite different from the old method of going to a farmer and obtaining a lease.

In the case of government owned land, the oil company makes application through the nearest Land Office for a permit to operate. A form is made out, and a notice is posted on the land itself, stating that the oil company is making application for an operating permit. If no contestants appear, this permit is granted quite readily by the Interior Department, through the Land Office, and the oil company is now ready to go ahead with the drilling. The cost of the filing fee and incidentals thereto amount to about $40 for 2,560 acres. A survey is made, and the location of the tract staked out after the permit is granted. In case of failure to comply with the regulations requiring operations to start within a specified time, the department has shown leniency in every instance, and the fear that was felt by the oil men generally that the leasing bill would prevent them from operating through a time limit is fast disappearing.

Thirty-Day Preference Right

It is customary for the oil company to place a notice of application for permit upon the land as soon as it is definitely decided to make a geological survey, and this posting of notice gives the oil company a 30-day preference right over any other party who may file upon the land likewise at a later time. For this reason, the application for a permit must give the exact time of day when the permit notice was placed.

Form 88 for Commercial Leases

In the case of land not held by the Federal Government, the procedure is quite different. In the case of privately owned land, the matter of operating titles is the same as in the other oil regions of the country. The representative of the oil company goes direct to the owner, and secures a lease from him, based on a rental and drilling clause. In the Rocky Mountain region, this lease is generally made on the well-known Form 88, which is generally recognized here as equitable to all concerned.

However, there has been considerable friction in this region over the title to the minerals in the earth under certain lands taken up under the homestead laws. Often a homesteader is under the impression that he owns not only the surface, but the underground as well. He may in some instances, but in many cases the homesteader is only entitled to the surface, and the oil operator is only liable to him for what damage is done to the top of the ground. For instance, a man takes up a section of land, or 640 acres, under the grazing homestead law. He is not entitled thereby to anything below the surface of the ground except water, and the land so taken up may at any time be applied for by an oil company for drilling and prospecting. In the older days, the homestead rights carried the mineral rights also, so that in many cases the old homesteads carry direct title to the minerals also, and at present a homesteader can secure title to 340 acres of mineral right under his land with his homestead.

School Land Leases

Another class of land in the Rocky Mountain region is that owned by the different states. Wyoming is a good example of this kind. In Wyoming, when this State passed from a territory to statehood, the Federal Government gave to the new commonwealth every section numbered 16 and 36 in every township in the State for school and educational purposes. Besides these, there were other tracts assigned to Wyoming for other purposes, so the State-owned lands are common all over this region.

To secure an operating title to such lands, the oil company applies direct to the secretary of state, and obtains a lease direct from the State for the land designated. The lease is given along the lines of the 88 form, and is usually a good contract for both parties; the initial fee is $200, but this is boosted where a field has been found. For instance, the Midwest Refining Co. offered $5,000,000 for one section in the Salt Creek Field recently when a certain State lease was put up for sale, and this offer was turned down by the State, although the Midwest secured the tract on another form of bid that carried a larger royalty.

After the oil company has secured title to operate, and proceeds to move in equipment for drilling, a decision is made by the company as to the type of drilling equipment to be used.

Cable tools are yet preferred for wildcat operations in this region; but where the formations are known through the drilling of wells with cable tools, rotary outfits are freely used.

Camp Comes First

The first need in moving into a new operation is a camp. Unlike other regions where the country is rather thickly settled, and oil operators can find board for the crews at local farmhouses or even in towns, oil operators in the Rocky Mountain region must supply suitable quarters for their crews and furnish food and housing for the men. Here we often have great distances to cover from a wildcat location to the nearest rail and supply point, and this matter is one point that the stranger to this region appears to fail to grasp. The Salt Creek Field, our largest operation, was 50 miles from the nearest railroad, until recently a line was built and completed to the field. Before the completion of this railroad, it was necessary to haul everything that went into that field over 50 miles of sagebrush desert; and before the pipelines were laid, the production was hauled into Casper by horses drawing improvised tankwagons. Even the water for the Salt Creek Field is sent through a pipeline from Casper, and no one who has not visited that field can understand and the tremendous difficulties that were met and overcome by the pioneers.

Auto Trucks Great Service

The auto truck has been the savior of the oil operator in Wyoming. With this machine to carry his equipment, he has conquered distance. When P. M. Shannon came to Wyoming 40 years ago, and brought drilling equipment to Salt Creek to drill the first wells, he hauled it all the way from Laramie by teams, across the plains and through the mountain passes a distance of over 200 miles, and the progress was considered good if they made 20 miles per day then. Now, the same equipment would be hauled that distance in two days' time, or even in one if the need were great and warranted great speed and two crews to the truck.

In making his survey, the geologist usually locates the first well and selects sites for the camps. The rig builders come next in the scale, and these men build the camp houses and put the rig; and when they leave, everything is ready for the tools and the regular crew. The rig cost varies as to location, but the rig timbers and lumber at Casper, including lumber for camp buildings, will run about $1,500, and the rig irons cost about

(Continued on Page 90)

IF YOU DON'T KNOW YOUR GROCERIES BETTER KEEP SILENT AND JUST GRIN

By J. L. Dwyer

There are lines you hang your clothes on;
There are lines that make you happy;
There are lines that make you fight;
There are lines that make you weepy;
And some lines will make you sing;
But the lines that grab the bacon
Are the lines the Grafter sling.
—Derrickfloor Ditties.

In the great game of oil every man has a good chance to become famous and rich. The path to greatness is always open, and be you poor as the proverbial churchmouse or rich as a former Coast Guard officer, remember you have an even chance, just like the contestants in a movie scenario contest.

Naturally, your opportunities are to some extent governed by your assets, and in the petroleum industry these be many and varied. Take the case of the lease grafters, whose chief asset is a rapid line of conversation. Their normal week's experience sound like several pages out of one of the current insults to the adult intelligence which may be purchased at any bookstore specializing in best sellers.

The grafters operate in many unusual ways. They hear of a tract of land in a desirable part of the state which is unencumbered by a lease, presto, several of them are immediately after it, and often as not, several of them reach the battleground simultaneously. Such an instance happened several years ago near Okemah, Okla. An elongated lease broker was talking with the farmer about a lease upon his land. A second broker drove up to the house, and violated the ethics of the profession by breaking in on the conversation.

The first broker had been making good progress, and the second endeavored to make up for lost time by turning the conversation to his advantage. Addressing the farmer he said; "Yes, sir, I'm a farmer boy, born and raised on a farm. Spent most of my life on a farm, and I've noticed that us farmer boys stick together. I know you'll give me your lease." The farmer turned to the first broker and said, "Were you ever around a farm very much?" to which the broker answered truthfully, "Very little."

Appreciating his supposed advantage, the second broker turned and surveyed the field adjoining the house, and with a superior air stated; "Nice crop you have there, is that oats or is it rye?"

The farmer registered complete disgust, and with a withering note in his voice announced, "That's alfalfa."

The first broker was awarded the lease.

Moral: In business like in poker, there are times when a discreet silence and a serene smile win the pot.

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MARGINS IN MARKETING

If one man sells 1,000 gallons of gasoline on a three-cent margin his gross earnings are $30.

If ten men sell that 1,000 gallons on a six-cent margin their gross earnings are only $6 each.

If three or four more are attracted into the business by the six-cent profit and the 1,000 gallons to be sold are divided among thirteen or fourteen, their gross earnings will not reach even the $6 each.

If two or three more of them try to sell more gallonage by taking advantage of the six-cent margin to cut prices a cent a gallon they will probably force the others down and all will lose money.

During the American Petroleum Institute meeting at Tulsa The Oil and Gas Journal suggested that the oil industry's next job would be to tackle the distribution of its products.

A few years back a 3½-cent margin between the delivered tank car and the tank wagon prices, with a 1-cent differential between the tank wagon and service station prices, was considered sufficient to cover all distribution costs and also allow an adequate margin.

Nowadays you hear that the distributors have got to have at least a 6-cent tank car-tank wagon spread, with a 2 to 4-cent differential between the tank wagon and service station prices.

Yet men in the business will tell you they did better with the 4½ or 5-cent rate between the refiner's and consumer's prices than they are able to do today with a rate ranging from 8 cents to 11 cents.

Because, even with all the increase in consumption, they are not selling the gallonage individually they were a few years ago.

For one thing, the number of distributing points has increased 10 times faster than the demand.

With increased overhead and proportionately less sales they have to get higher prices to keep in business.

That is the answer to criticism that the margin between the refinery and the consumer is out of line.

It is also the explanation of the seeming paradox that men are making less money with higher margins.

When there is an overproduction of products prices fall. When there is a surplus of labor wages fall. When there is an overproduction of marketing outlets profits fall.

Today we have the economic situation of distribution of gasoline costing as much as refiners get for making it, including crude.

The producer of oil finds crude prices at rock bottom. The refiner is getting less for his product than at any time since the war. Yet the margin for distribution is double what it was a few years ago and distributors are making less than they did then.

A flood of light is thrown on the situation by the address of C. B. White of the Vacuum Oil Co., published in full in this issue.

Five years ago, with only one-half as many automobiles as we have today, there were but 12,000 gasoline stations in the country, an average of 875 cars to the station. Today there is an average of only 80 cars to a station with 250,000 places selling gasoline.

There is thus less than one-tenth the number of cars to a station that there was five years back.

Today stations on an average handle during a whole week only about as many cars as have been serviced in one day.

Consider what that must mean in overhead for unproductive labor and unnecessary overhead in erecting and maintaining stations that could do in one day business now spread over a week.

There is not another business in the world where the proportion of retail outlets to potential customers is as disproportionate.

This is amazingly shown by the United States Bureau of the Census figures quoted by Mr. White. There are 5,000 customers to each shoe store, 1,400 to each drug store, and more than 500 to each grocery store, despite the commonness of corner groceries.

Contrast that with but 80 motor car owners to each gasoline station and you can see in a minute what is the matter.

Corner groceries open and go under with familiar frequency. But corner groceries have never been able to dictate to the manufacturers of groceries what price should be paid for their products.

The gasoline marketing trouble dates back to the birth of the automobile. It really is nobody's fault. It grew naturally out of the original conditions when there was only an occasional call for gasoline. Those who sold it kept a small supply as a side line to oblige customers for other things, like stamps in a drug store.

This was the condition until the motor car ceased to be a luxury. Then almost overnight, so rapid was the development, gasoline became a commonplace commodity. Running out of gas became a real bugbear to motorists. To meet their needs gasoline pumps sprang up along the roadsides and filling stations dotted corners.

The demand grew constantly. There never was a year when the consumption declined.

To the uninformed outsider it seemed an easy way to make money and the popular notion of the extraordinary profits in the business attracted thousands into it. These came and went but the established distributing companies kept on building to meet the assured increase in demand that had never failed.

The one fact that was not sufficiently taken into account was that the thing was being overdone; that, great though the increase in consumption was, the increase in stations was ten times greater.

Increased cost of distribution required higher margins but proportionately smaller gallonage reduced the rate of profit.

So, today we have a margin between tank car and tank wagon that is out of line but still absolutely necessary under existing conditions to enable the distributors to break even.

This is an economic condition that cannot continue. The corner grocer who tries to do business without a knowledge of cost accounting soon disappears from the neighborhood. He discovers that it is not how much but what he sells for a profit that counts.

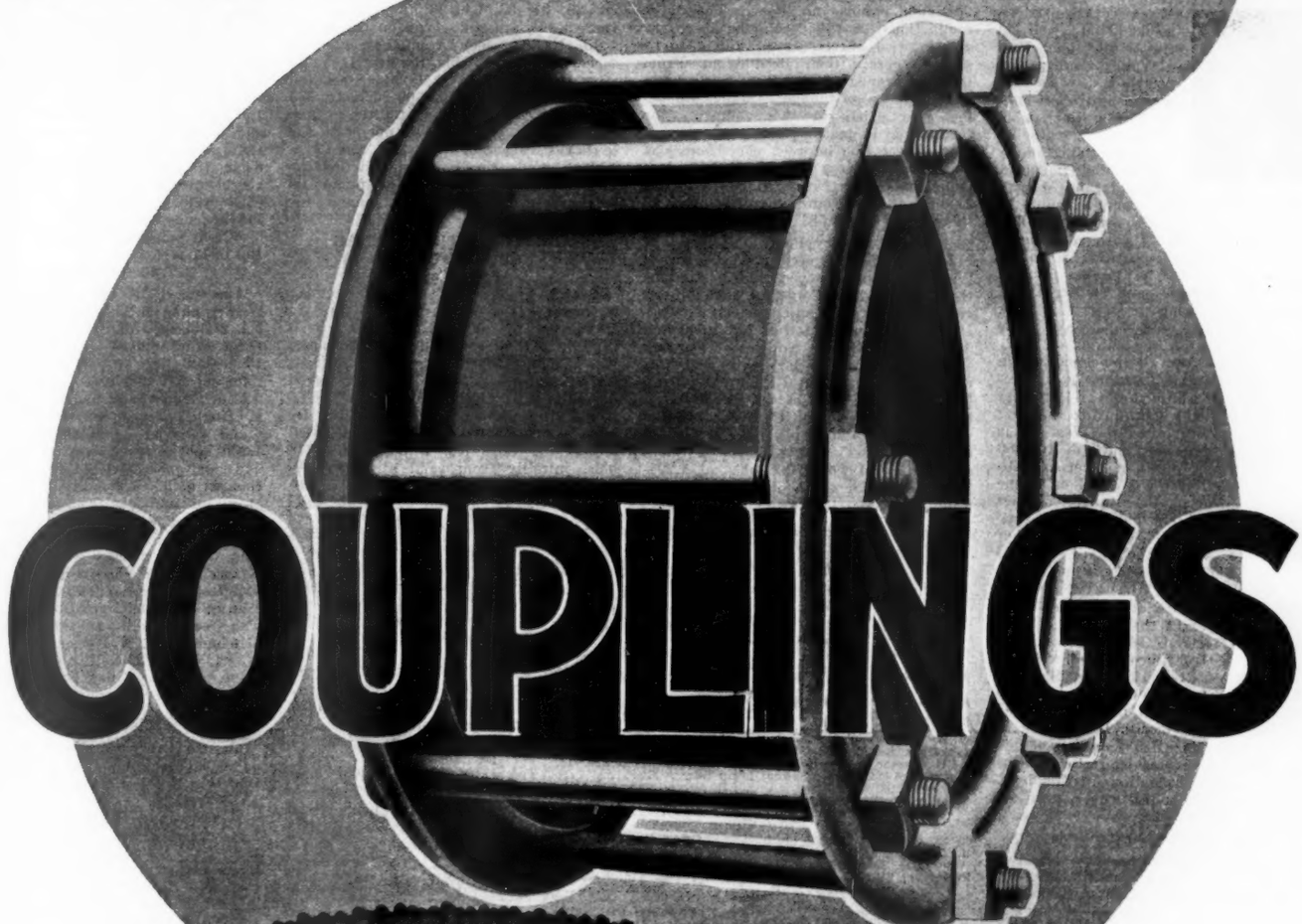
The gasoline business is learning the same lesson by ruinous experience. With what might be one day's sale at one day's expense stretched over a week with a week's expense running on, it should be clear that it is time to wait until the demand catches up with the outlets before adding to the number of outlets in the hope of gaining a greater share of the gallonage.

Matters have reached a pass where the competition is going to be in salesmanship for a profit, not in volume regardless of profit.

Mr. White cites the disappearance of the nickelodeons as a warning. They have been replaced by the super motion picture houses. He predicts the super service station is coming fast.

Is that going to be the answer to our marketing problems?

DRESSER



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DOMINATE

Young County Has 6,600 Bbl. Producer

Eastland County Well Makes 35 Barrels an Hour. Wichita Falls and West Texas at New Records

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., Apr. 18.—A 10,000-bbl. increase in estimated production of the North and West Texas districts, a 6,600-bbl. well in the South Bend Pool of Young County, (reported last week as flowing only 250 bbls. an hour initial), a 35-bbl. an hour semiwildcat in Eastland County linking the Thomas & Reynolds and Morgan Pools southwest of Carbon, a couple of interesting semiwildcats north of the Fry Pool in Brown County with good showings of oil, and the smashing of initial production records in Cooke County, both in the Muenster and Hooser Pools, furnished convincing proof this week that crude price reductions have little immediate effect on the output of oil.

Due to the Stovall phenomenon in Young County and to other good producers, the Wichita Falls district jumped to 104,890 bbls. during the past week, a new all-time record. West Texas also established a new mark of 101,080 bbls. as a direct result of feverish drilling in the Church-Fields Pool of Crane County; and even the Ranger district jumped nearly 1,000 bbls. to the estimated figure of 65,330 bbls. because of the McLester well in the Ramsower Pool of Eastland County and to additional good completions in the Fry Pool of Brown County. This increase was scored in spite of the fact that Roeser & Pendleton and Marland Oil Co. have practically all of their uncompleted wells in the great Cook Ranch Pool of Shackelford County shut down on top of the sand, and The Texas Company also has seven inside wells on its Lowe lease in the Fry Pool shut down on top of the sand and is making no effort to swab or otherwise force production on this lease except along the lines where drainage occurs.

May Increase Next Week

Considering all factors, it is probable that this week's output of 271,300 bbls. for the whole North and West Texas district will be maintained next week, and there is a good chance that it will be further increased. Much of Cooke County's new production does not figure in this week's report, and a number of new Crane County wells will have to be added. So will the new Eastland County 35-bbl. an hour producer near Carbon and the McLester well in the Ramsower Pool which has increased to 2,300 bbls. due to slight deepening. Declines in older areas may offset these new factors to some extent but they are bound to have some effect in boosting the figures.

Furthermore, the Illinois Pipe Line Co.'s 6-inch line from McCamey to the Yates Pool in Pecos County is about ready to run oil and when that prolific shallow field is opened up there is no telling what it will do to the production figures of this district but it will do aplenty.

Eastland's Surprise

One of the big surprises of the week attended the drilling in of Cranfill & Reynolds' No. 1 Spencer, C SW NE, Section 15, Block 3, southwest of Carbon in Eastland County. This well is nearly a mile southwest of the Thomas & Reynolds and Amerada Petroleum Corp.'s discovery well on the McAllester farm which flowed 653 bbls. when the first gauge was taken in January. The new extension well topped the pay at 2,976 feet and when it was drilled in 15 feet it was estimated good for 500 bbls. flowing by heads every 45 minutes. The real pay was found in the last foot or two. Sunday the well was deepened 4 feet to 2,995 feet and Monday it was flowing 35 bbls. an hour. The three completions in this pool, the discovery and its two offsets, have all had to be shot to obtain their production. From the appearance of this new find, therefore, it looks as though a major producing area exists in this vicinity. The Cranfill & Reynolds producer is almost on a direct line between the Thomas & Reynolds discovery and the Independent Oil & Gas Co.'s No. 2 Snider which is 2 miles farther southwest. Elevation of the new well is 1,581 feet.

Fry Pool

Interest in the territory northeast of the Fry Pool received added stimulus this week when Corzelius and others' No. 1 Marr, NE, Section 62, H. P. Tuggle Survey, topped sand at 1,235 feet and drilled to 1,243 feet with a good showing of oil. At latest report this well was cleaning out cavings.

In the south part of the Fry Pool, J. K. Hughes Developing Co.'s No. 2 Shore was good for 1,200 bbls. after a 5-quart shot at 1,300-25 feet, and No. 4 Shore was estimated worth 900 bbls. at 1,291-1,314 feet prior to shooting. The Texas Company's No. 40 Lowe, third location from the southwest corner of its tract, flowed 532 bbls. during the first 11 hours from pay sand at 1,295-1,320 feet. Nos. 26, 29, 31, 33, 34, 36 and 39, on the Lowe lease, are shut down on top of the sand. No. 37, second from the southwest corner, flowed 392 bbls. the first 14 hours after a 7-quart shot at 1,322-30 feet and No. 38 increased from 400 bbls. to 635 bbls. after a 5-quart shot at 1,311-36 feet. This well is one location north of the southwest corner of the lease. Rex-Pyramid Oil Co.'s No. 1, which startled the fraternity some time ago, now pumps 96 bbls. It was completed originally for 1,800 bbls.

NORTH CENTRAL TEXAS COMPLETIONS

Archer County

Brown and others' No. 1 Holliday Townsite was a failure at 1,825 feet. L. T. Burns' No. 6 Turbeville-E, found sand at 1,476-82 feet and made 130 bbls.; No. 7 made 200 bbls. at 1,448-73 feet. Carter and others' No. 1 Benson was a duster at 1,018 feet. Harris and others' No. 2 Farmer made 57 bbls. initially from sand at 1,460-67 feet. Humble Oil & Refining Co.'s No. 1 Ward made 46 bbls. initially from sand at 1,038-44½ feet. Kruger & Staley's No. 1 Turbeville was swabbing 250 bbls. from sand at 1,454-80 feet. Marland Oil Co. and Consolidated Oil Co.'s No. 5 Ward made 40 bbls. initially from sand at 1,038-50 feet. Muse and Robinson and others' No. 1 Cranfill was a failure at 1,604 feet. Petroleum Producers Co.'s No. 4 Turbeville-C, had sand at 1,427-69 feet and was swabbing 175 bbls. Plains Production Co.'s No. 4 Lyles found oil sand at 1,539-47 feet and made 94 bbls. of oil and 5 bbls. of water, total depth being 1,457 feet. Pois & Schultz's No. 4 Miller made 15 bbls. at 1,573-85 feet. Royal Petroleum Co.'s No. 2 Wilson made 70 bbls. of oil and 5 bbls. of water at 1,546-49 feet. Simms Oil Co.'s No. 20 Turbeville-A, was swabbing 150 bbls. at 1,492-1,511 feet.

Brown County

Amerada Petroleum Corp.'s No. 24 J. H. Fry pumped 25 bbls. at 1,362-70 feet; No. 2 Henslee was a duster at 1,315 feet. Gray and others' No. 1 Brewer made 15,000,000 feet of gas at 1,147-54 feet, total depth 1,168 feet. Hays' No. 1 King was dry and abandoned at 1,335 feet. J. K. Hughes Developing Co.'s No. 2 Shore found sand at 1,300-25 feet and made 1,200 bbls. after a 5-quart shot; No. 4 had sand at 1,291-1,314 feet and was estimated at 900 bbls.; No. 7 had 100 feet of oil in the hole from top of sand at 1,299 feet and was pulling big pipe.

Magnolia Petroleum Co.'s No. 3 Metts was dry and plugged at 1,560 feet. McKenna's No. 2 Shore topped sand at 1,312 feet and was drilled to 1,338 feet, then plugged back to 1,334½ feet and was estimated good for 100 bbls. Mitcham's No. 1 Keeler was a failure at 1,435 feet. O'Neill and others' No. 1 Lane was also a dry hole at 1,616 feet, two shots of 50 and 80 quarts respectively having failed to result in production.

Orange Oil Co.'s No. 1 Perry made 5,000,000 feet of gas at 878-94 feet. Parker's No. 1 Keesee was a duster at 1,751 feet.

Rex-Pyramid Oil Co.'s No. 12 J. H. Fry was good for 140 bbls. at 1,277-84 feet. Senior Petroleum Co.'s No. 1 Williams was dry at 1,636 feet. Simms Oil Co.'s No. 1 Miers was also plugged at 2,107 feet, and so was Sorrels and others' No. 1 Davis at 1,506 feet. Tidal Oil Co.'s No. 1 Arledge had sand at 1,257-1,373 feet, 1,275-78 feet and 1,280-83 feet, making 20 bbls. of oil and 1,500,000 feet of gas. Wentz Oil Corp.'s No. 11 Shore was shot with 20 quarts at 1,296-1,321 feet and made 150 bbls. afterward.

Callahan County

Gibson & Johnson's No. 1 Jackson was dry and abandoned at 1,214 feet. Navarro Oil Co.'s No. 1 Bennett & Booth had sand at 1,616-46 feet and after a 20-quart shot at 1,615-35 feet was good for 150 bbls. Shaw and others' No. 1 Miller was a 100-bbl. producer after a 120-quart shot at 1,661-95 feet; No. 2 was dry and plugged at 1,691 feet.

Clay County

Empire Gas & Fuel Co.'s No. 1 Wright was a failure and abandoned at 1,176 feet.

Coleman County

Roth & Faurot's No. 1 Sealy & Smith was completed for 7,000,000 feet of gas at 2,580-82 feet. Schermerhorn Oil Co. and others' No. 2 Gray was plugged and abandoned at 2,533 feet. Chaney and others' No. 3 Overall made 14,750,000 feet of gas at 2,210-20 feet.

Comanche County

Moore's No. 1 Braswell was a failure at 3,098 feet.

Cooke County

Abernathy and others' No. 1 Hundt was dry and abandoned at 1,915 feet, and so was Amerada Petroleum Corp.s

WEST TEXAS WILDCATS

Week Ending April 16, 1927

Company, Farm and Location—	Remarks—
ANDREWS COUNTY	
Calvin & Belt's No. 1 Ratliff & Bedford, C NE Sec. 16, Blk. A-54	Location.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 73, Public School Land	Location.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School Land	Digging slush pit.
C. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-25, Public School Land	Material on ground.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 13, Blk. A-52, Public School Land Sur.	Top salt 1,375 ft.; shut down 1,530 ft.
Maer & Staniforth's No. 1 W. B. Taylor, C SE Sec. 15, Blk. A-42, Public School Land Sur.	Top salt 1,650 ft.; drilling 2,070 ft.
BORDEN COUNTY	
J. L. Kennedy's No. 1 J. S. York, SE cor. Sec. 322, Blk. 97, H. & T. C. Sur.	Location.
Stivers et al's No. 1 Snodgrass, C NW Sec. 475, Blk. 97, H. & T. C. Sur.	Total dept 1,000 ft.; underreaming 10-in.
CASTRO COUNTY	
Colorado O. & R. Co.'s No. 1 M. Siemons, SW cor. Sec. 78, Blk. M17, B. S. & F. Sur.	Rig.
Gulf Prod. Co.'s No. 1 Clements, SW cor. Sec. 27, Blk. M-10-A, Sealy & Morris Sur.	Total depth 1,505 ft.; underreaming 8-in. to 1,490 ft.; water sand 1,435-50 ft.; total depth 2,055 ft.; underreaming 8-in. 2,036 ft.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur.	Shut down 510 ft. for casing.
COCHRAN COUNTY	
J. C. Whicker's No. 1 G. C. Landon, 300 ft. N and 5,300 ft. E SW cor. League 154 Sherman Co. Sch. Ld.	Shut down 1,550 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 S. M. Conner	Shut down 730 ft.
CONCHO COUNTY	
Harry Adams et al's No. 1 Price, C SW Sec. 78, Blk. 71, Alex Gregg Sur.	Spudded 20 ft.
Associated Pet. Co.'s No. 1 Sam Waring, SW cor. Jacob Getthardt Sur. No. 2,025	Fishing bit 2,300 ft.
Arkansas Fuel Co.'s No. 1 Hartgrove, SW cor. NW Sec. 49, Blk. 70, H. & T. C. Sur., 13 miles E of Paintrock	1,000,000 ft. gas 1,100-10 ft.; 4,500,000 ft. gas 1,142-47 ft.; small show oil in sandy lime 2,165 ft.; show oil 2,454-80 ft.; show oil and 200,000 ft. gas 2,494-2,512 ft.; bailed 8 bbls.; drilling 2,518 ft.
Mullins, Davis & Davenport's No. 1 William Hughes, C Sec. 6	Shut down 2,250 ft.; contract depth.
The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur.	Total depth 1,680 ft.; underreaming.
Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Mrs. A. Schmidt Sur. A-1,1-3	Flowed salt water with little gas 1,550 ft.; shut down 1,595 ft.
Swoveland & Lewis' No. 1 Plants & Bacon, C E ½ Sec. 8, G. C. & S. F. Sur.	Location.
COTTLE COUNTY	
Sun Oil Co.'s No. 1 Tom Burnett, C NW SE Sec. 6, Blk. L, S. P. R. R. Sur.	Drilling 375 ft.
CRANE COUNTY	
Gulf Prod. Co.'s No. 1 W. N. Waddell, NE cor. Sec. 12, Blk. B-25, School Land	Drilling 796 ft. with core drill machine.
McCamey & Zoch's No. 1 Cowden Brothers, cor. Sections 30, 31, 40, 41, Blk. X	Top salt 995 ft.; drilling 3,256 ft.; contract depth 3,250 ft.

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No. 1 Walker at 2,880 feet. American Refining Co.'s No. 12 Dennis was good for 35 bbls. at 1,242-72 feet after plugging back from 1,283 feet; No. 13 Dennis made 40 bbls. at 1,219-46 feet, total depth 1,249 feet.

Hedrick-Camp Drilling Co. and Oil Operators Trust Co.'s No. 4 Kleiss swabbed 400 bbls. the first 24 hours at 1,926-45 feet. Homer Chapman's No. 1 Hemphill was dry and plugged at 2,506 feet. Stroube & Stroube's No. 1 Koelzer-B swabbed 480 bbls. the first 24 hours from sand at 1,630-40 feet and broken sand and lime at 1,621-30 feet. Sun Oil Co.'s No. 2 Dennis made 15 bbls. at 1,188-94 feet, total depth 1,232 feet. The Texas Company's No. 1 Dennis, in the Bulcher Pool extension, swabbed 248 bbls. the first eight hours from sand at 1,309-16 feet.

Denton County

McMahon & Daniels' No. 1 Wright was dry and abandoned at 2,530 feet.

Eastland County

McLester Oil Co. and others' No. 1 Thorp flowed 2,300 bbls. steadily from 3,800-01½ feet.

Hardeman County

Murchison Oil Co.'s No. 1 Ayres was plugged and abandoned at 3,002 feet.

Jack County

Buttram Petroleum Co.'s No. 6 C. K. Cullers made 40 bbls. from sand at 2,102-09 feet; No. 3 Preston-A made 35 bbls. at 2,072-77 feet; No. 6 Preston-C was temporarily abandoned at 2,100 feet. The Empire Holding Corp.'s No. 1 Snedecker-B was a duster at 1,020 feet.

Montague County

Cato Oil Co.'s No. 13 Rolls estate made 40 bbls. at 843-78 feet. Pure Oil Co.'s No. 2 Keck-A flowed 27 bbls. in 24 hours through 2-inch tubing from sand at 825-30 feet and broken sand at 830-40 feet, then quit flowing and made 850,000 feet of dry gas. Same concern's No. 8 Maddox-C was good for 35 bbls. from sand at 880-913 feet. The Texas Company's No. 3 Howard-C was dry and plugged at 1,752 feet; No. 11 Maddox-D made 51 bbls. at 925-46 feet.

Shackelford County

Albany Oil Co.'s No. 3 Reynolds pumped 45 bbls. at 1,357-71 feet. Gleason and others' No. 1 McGough was dry and abandoned at 909 feet. Ramsey & Maxey's No. 1 Jeter was dry at 1,240 feet. Roeser & Pendleton's No. 8 Moberly-B, Section 12, was plugged as dry at 1,420 feet. Rose and associates' No. 2 Moberly pumped 25 bbls. at 1,384-93 feet. Stalker Oil Co.'s No. 1 Goodwin was dry and abandoned at 2,040 feet. White Eagle Oil & Refining Co.'s No. 1 Gorsuch pumped 25 bbls. of oil and 10 bbls. of water at 1,566-77 feet.

Throckmorton County

Magnolia Petroleum Co.'s No. 1 Graham pumped 29 bbls. of oil and 1 bbl. of salt water the second 24 hours at 3,195-3,200 feet, total depth 3,211 feet. Reiter-Foster Oil Corp.'s No. 3 Graham made 120 bbls. from sand at 1,828-33 feet.

Wichita County

Frank Baldwin's No. 3 Waggoner was a failure at 1,943 feet. Bridwell & Mayfield's No. 4 Waggoner was also dry at 1,923 feet, and so was F. B. Jackson, Jr.'s No. 1 Munger, at 1,808 feet. Magnolia Petroleum Co.'s No. 1 Lute Ancell was a failure at 2,378 feet; No. 24 Ramming-B pumped 38 bbls. from sand at 1,706-24 feet. Murchison Oil Co. and Cranfill's No. 1 Waggoner pumped 35 bbls. at 1,253-57 feet.

Panhandle Refining Co.'s No. 9 Riley-Griffin pumped 70 bbls. from sand at 1,787-1,801 feet. Simms Oil Co.'s No. 2 Waggoner was dry and plugged at 2,273 feet.

Wilbarger County

Consolidated Oil Co. and J. S. Cosden's No. 1 Waggoner, Section 57, pumped 46 bbls. from sand at 1,225-32 feet. Fain-McGaha Oil Corp.'s No. 1 Murphy was dry and abandoned at 2,227 feet; No. 1 Waggoner-F was estimated good for 25 bbls. at 1,810-26 feet, after plugging back from total depth of 1,989 feet.

Humble Oil & Refining Co.'s No. 19 Waggoner-H swabbed 160 bbls. from sand at 2,367-70 feet and lime 2,571-99 feet. Kelly and others' No. 1 Waggoner, Section 26, was a failure at 2,925 feet. Magnolia Petroleum Co.'s No. 76 H. & T. C. fee, pumped 24 bbls. of oil and 10 bbls. of salt water at 1,667-73 feet. Phillips Petroleum Co.'s No. 14 Waggoner-NN pumped 28 bbls. from lime at 2,315-23 feet and sand 2,425-33 feet, total depth 2,440 feet.

Young County

Bridwell & Heydrick's No. 1 Hamilton was dry and plugged at 950 feet. Panhandle Refining Co.'s No. 7 Mathews made 10 bbls. at 721-50 feet. Reed and others' No. 7 Jack was good for 45 bbls. at 520-64 feet. Riggs and associates' No. 4 Jones was dry and plugged at 545 feet, and so was Winemiller Oil Co.'s No. 1 Miller-B, at 823 feet.

In the South Bend district, Atkinson & Sandefer's No. 1 Ford was completed for 10,000,000 feet of gas and 2 bbls. of oil at 3,095-3,105 feet and was connected to the Phillips Petroleum Co.'s gasoline plant. E. C. Stovall's No. 5 fee flowed 6,600 bbls. initially, and 5,300 bbls. the second day from lime pay at 3,892-96 feet.

Shermerhorn Oil Co.'s No. 1 Thompson flowed 65 bbls. from sand at 2,050-90 feet, total depth 2,263 feet but was not completed.

WEST TEXAS COMPLETIONS

Crane County

Church & Weekly's No. 1 University flowed 2,515 bbls. at 2,842-2,927 feet. Eastland Oil Co. and Collett's No. 4 University was completed for 1,100 bbls. at 2,836-98 feet; No. 8 flowed 2,600 bbls. initially at 2,845-98 feet.

McMan Oil & Gas Co.'s No. 2 Hughes was shot with 150 quarts at 2,370-2,410 feet and pumped 110 bbls. Simms Oil Co. and Atlantic Oil Producing Co.'s No. 4 University made 1,500 bbls. initially at 2,905-65 feet; No. 1 University-C topped pay at 2,804 feet and started flowing at 2,855 feet. At 2,880 feet it flowed 277 bbls.; No. 1 University-D also topped the pay at 2,804 feet and started flowing at 2,818 feet. At a total depth of 2,880 feet it flowed 995 bbls. Sunday.

Tidal Oil Co.'s No. 2 University-F topped pay at 2,820 feet and flowed 1,560 bbls. initially at 2,920 feet; No. 3 University-F topped pay at 2,867 feet and started flowing at 2,885 feet. At 2,920 feet it flowed 45 bbls. the first hour, 55 bls. the second and 55 bbls. the third hour; No. 4 flowed 201 bbls. in nine hours at 2,850-85 feet then hit the big pay at 2,887 feet and at 2,905 feet flowed 1,697 bbls. Sunday.

Howard County

Magnolia Petroleum Co.'s No. 4 Mary Chalk swabbed 85 bbls. after a 50-quart shot at 1,623-58 feet, total depth 1,661 feet; No. 2 Hyman Chalk made 13 bbls. initially after a 15-quart shot at 1,565-82 feet, total depth 1,590 feet; No. 7 Chalk-A made 65 bbls. at 1,581-92 feet.

Marland Oil Co.'s No. 10 Otis Chalk swabbed 40 bbls. after a 20-quart shot at 1,602-22 feet, total depth 1,624 feet; No. 6 Chalk-A swabbed 20 bbls. after a 15-quart shot at 1,512-89 feet; No. 2 H. R. Clay made 25 bbls. after a 20-quart shot at 1,793-1,803 feet, total depth 1,869 feet.

Mitchell County

Eastland Oil Co.'s No. 2 C. M. Adams made 75 bbls. at 2,935-3,080 feet following a 320-quart shot. The California Co.'s No. 1 W. A. Butler, Lease 2, was shot with 40 quarts at 2,850-3,025 feet and 3,095-3,120 feet but made only 2 bbls. of oil and some salt water. It was abandoned at 3,200 feet.

Nolan County

The locations for Stein & Grebin's No. 1 Ross and Walford and others' No. 1 Simpson were abandoned.

Pecos County

Buell & Hagan's No. 1 University was plugging to abandon at 3,008 feet. Humble Oil & Refining Co. and Kirby Oil Co.'s No. 1 Rheinstrom was plugged at 2,345 feet, and Crosbie Drilling Co.'s No. 1 Yates was also plugged at 1,577 feet.

Upton County

Dixie Oil Co.'s No. 23 Burleson was estimated good for 350 bbls. of oil, no water, at 1,986-2,065 feet. Humble Oil & Refining Co.'s No. 4 Ricker swabbed 25 bbls. at 2,181-2,233 feet. Independent Oil & Gas Co.'s No. 48 Taylor pumped 15 bbls. after a 70-quart shot at 2,120-36 feet, total depth 2,141 feet. Republic Production Co.'s No. 6 Baker swabbed 135 bbls. after standing 12 hours and is being put on the pump.

Winkler County

F. P. Zoch and others' No. 1 J. Sealey was dry and abandoned at 4,080 feet, (steel line measurement).

Val Verde County

Transcontinental Oil Co.'s No. 1 Stevenson was dry and plugged at 4,412 feet.

NORTH CENTRAL TEXAS ESTIMATED PRODUCTION
Week Ending April 16, 1927

Ranger District—	This Week	Last Week
Brown County	25,215	24,948
Callahan County	4,870	4,925
Coleman County	1,355	1,375
Comanche County	1,600	1,607
Palo Pinto County	500	510
Ranger	8,410	7,480
Shackelford County	12,940	13,115
Stephens County	10,440	10,510
Total Ranger District	65,330	64,470
Wichita Falls District—		
Archer County	30,515	29,450
Baylor County	100	100
Clay County	700	685
Cooke County	1,730	1,590
Jack County	530	620
Montague County	13,120	13,235
Throckmorton County	1,550	1,690
Wichita County	31,710	31,350
Wilbarger County	13,810	13,580
Young County	11,125	8,565
Total Wich. Falls district	104,890	100,865
West Texas District—		
Big Lake Field	27,730	27,070
Crane County	40,340	33,005
Crockett County	1,600	1,460
Ector County	20	25
Garza County	5	5
Glasscock County	60	65
Howard County	2,955	2,650
Jones County	2,585	2,735
Loving County	25	30
Mitchell County	4,100	4,105
Pecos County	612	3,615
Scurry County	28	25
Upton County	19,960	20,650
Winkler County	1,060	690
Total West Texas district	101,080	96,130
Grand total North and West Texas	271,300	261,465
Increase	9,835	

NEW FOURTH SAND AT SMACKOVER 32 GRAVITY OIL—LATE FIELD NEWS

SHREVEPORT, La., Apr. 19.—Stewart and associates' No. 8 Murphy, Section 9-16-15, Norphlet area of Smackover, was brought in Tuesday flowing an estimated 2,500 bbls. of approximately 32 gravity oil from the new fourth sand level. It has 8 feet of sand at 2,788 feet. This is by far the best well in this deeper formation which promises new sensations for Smackover. The oil, contrary to that produced in the three shallower sands in Norphlet, compares favorably with the light oil production of the Louann sector of Smackover. Arkansas Fuel Oil Corp.'s No. 5 Logan, Section 28-10-12, Pleasant Hill district, or northern Sabine Parish, was swabbed in Tuesday morning making approximately 100 bbls. daily. This is the third producer brought in by the Arkansas Fuel Oil Corp. in the past 10 days and makes a total of four now in this wildcat area.

WEST TEXAS

FORT WORTH, Tex., Apr. 19.—In the Church-Fields Pool of Crane County, Independent Oil & Gas Co.'s No. 1 University-A, NE cor. NW, Eection 46, Block 30, topped pay at 2,841 feet and found big pay at 2,902-26 feet, flowing 1,700 bbls. Simms and Atlantic's No. 2 University-A, first big well in the field, was put on air last Thursday when their compression plant was completed. Tubing was run 2,500 feet and pressure of 250 pounds applied after which the well flowed 80 bbls. Hourly production of this lease Saturday was 3,920 bbls. from three wells and Sunday morning's gauge was 4,281 bbls. Eastland Oil Co. and Collett lease gauged 7,073 bbls. Saturday and 7,500 bbls. Sunday, leading the field; Humble company, 6,654 bbls.; Tidal, 6,055 bbls.; Simms and Atlantic, 5,551 bb's. from all leases Sunday.

In Winkler County, Llano Oil Co.'s No. 1 Scarborough encountered a formation at 2,671 feet believed by the company's geologist to be big lime. Samples at this depth carry a strong odor of oil and the well is shut down to run 6-inch. Among various company geologists who have examined the samples wide divergence of opinion exists as to whether lime has been reached. Cuttings from 2,655-71 feet show lime with considerable anhydrite but the latter may be from open hole above.

BIG PANHANDLE WELL

FORT WORTH, Tex., Apr. 19.—Cockrell & McIlroy's No. 1 Cockrell, Section 1, Block E, S. & S. E. Survey, Hutchinson County, came in this morning making better than 5,000 bbls. daily from a total depth of 2,835 feet. The well is making 25,000,000 feet of gas from below 2,705 feet. It flowed 168 bbls. the first hour through a separator then jumped to 200 bbls. an hour and is now flowing at the rate of 212 bbls. an hour. Prairie Oil & Gas Co.'s No. 2 McConnell-B, SE cor. NE, Section 67, Block 4, flowed 1,320 bbls. the first 24 hours from lime pay at 3,115-18 feet, total depth 3,135 feet.

KANSAS

A gas well in McPherson County, Kansas, furnished interesting late news. E. B. Merriam and others' No 2 Anderson, SW cor. SE SW Section 29-18-2w, was reported making 9,000,000 feet of gas from sand believed to be 2,934-35 feet. This well is 10 miles northwest of the city of McPherson.

OKLAHOMA

In the Earlsboro region of Seminole, the well of J. E. Crosbie and others, No. 1 Bryant, SW cor. NW Section 9-9-5, flowed 5,880 bbls. the first 24 hours after being deepened 3 feet. Sand is now reported 4,296-99 feet, and the well is alleged to have flowed 400 bbls. an hour for two hours when opened on Monday of this week. The present production is made with the well slightly pinched in.

This occurrence once more changes the Earlsboro situation, and makes it apparent that a new high is located northwest of the discovery well in Section 16-9-5. As the latter has been a rather erratic field, the real worth of the land around the Crosbie well will hardly be known until the offset wells have been drilled in. The Philmack Oil Co.'s test offsetting the Crosbie well should be drilled in immediately.

The Greater Seminole Field produced 329,936 bbls. on Monday of this week. The Amerada Petroleum Corp.'s No. 3 Rasco, NE cor. NW SW Section 15-8-6, found the Wilcox sand at 4,126-61 feet and has a bad fishing job. The hole filled 3,000 feet with oil.

In the Bowlegs area, the Indian Territory Illuminating Oil Co.'s No. 2 Davis has increased in production without stimulation. The well's output jumped from 6,400 to 7,900 bbls. without being drilled any deeper or being agitated in any way.

The Bowlegs Pool of the Seminole Field was extended a quarter mile west by the completion of the Sinclair Oil & Gas Co.'s No. 3 Harjo, SW cor. SE SE Section 14-8-6, which is one of the best wells in the pool and flowed 2,616 bbls. the first 15 hours at only 2 feet in the Wilcox sand touched at 4,360 feet.

GULF COAST

HOUSTON, Tex., Apr. 19.—Gulf Production Co.'s No. 85 Phoenix at Hull Pool is flowing 4,000 bbls. at 3,440 feet. Vacuum-Gulf companies' joint No. 14

(Continued on Page 158)

Carson Well Flows 50 Bbls. an Hour

Skelly Producer on Schafer Ranch Biggest of the Week. Gray County Area Looks Promising

By James H. Dameron
Staff Correspondent, Texas Panhandle Fields

FORT WORTH, Tex., Apr. 18.—Although drilling operations in the Panhandle are being curtailed and have been declining steadily for the past three weeks, production of that area has climbed 1,000 bbls. in the past two weeks and several new wells during the past week extended producing territory. While the curtailment program was not expected to bring immediate results in bringing down production because only a few of the wells close to the pay zone were shut down, Panhandle production has not declined at the rate expected. The increase there can be accounted for partly because the weather has played no part in pulling down production. At the same time new wells have been completed with sufficient initial production to offset the decline in most of the older wells.

Recent extensions to producing areas are not looked upon as threats to the price structure of Panhandle crude by operators closely in touch with Panhandle and the general crude market. Nor do those operators expect a much greater production from the district during the warmer months if the market fails to strengthen because the present curtailment program there is expected to hold the field's production in check to do its part in aiding general conditions.

Big Well on Schafer Ranch

Probably the most important development of the area during the week was the bringing in of a "big money" producer in the McConnell district of Carson County by the Skelly Oil Co., on its Henry Schafer ranch. The well, No. 1 Schafer, Section 198, Block 3, I. & G. N. Survey, flowed 1,287 bbls. the first 24 hours from lime pay and granite wash at 3,130-61 feet and is now flowing at the rate of 50 bbls. per hour.

The Skelly company's well is on a 13,000-acre lease. Three other wells are drilling on the Schafer ranch. The area was opened some time ago by the Prairie Oil & Gas Co.'s No. 1 J. W. McConnell, which was a big well. The Skelly well is a little more than a mile to the northeast of the Prairie company's well. The area is in eastern Carson County and less than 2 miles from the Gray County line. The oil is being run into a 55,000-bbl. storage tank.

To the east in Gray County Blackwell and McGee's No. Bowers, Section 92, Block 2, has made the area two miles south of the Pampa Pool look good. The well has been connected to a separator and is making around 60 bbls. daily from 2,946-50 feet. It is being flowed by 9,000,000 feet of gas found at 2,970-74 feet.

Carson County Tests

Five other Carson County tests were showing promise early in the week. J. T. Parks' No. 2 Noel, SW cor. NW, Section 198, Block 3, is spraying 10 bbls. daily from lime and granite wash topped at 3,171 feet. The bit is going through the same formtaion at 3,186 feet.

McMan Oil Co.'s No. 1 Percival, Section 199, Block 3, topped the lime and granite wash at 3,160 feet and is drilling at 3,221 feet. The well swabbed 315 bbls. Osborne and associates' No. 1 Percival, Section 199, Block 3, topped the lime and granite wash at 3,166 feet and was drilled to 3,190 feet. It swabbed and flowed 120 bbls. the first 24 hours. The Texas Company's No. 1 Noel, Section 187, Block 3, topped granite wash at 3,230 feet and was drilled to 3,252 feet and flowed 225 bbls. the first 24 hours. Prairie Oil & Gas Co.'s No. 1 McConnell-B, Section 67, Block 4, topped lime and granite wash at 3,110 feet and drilled into it 50 feet. The well flowed 50 bbls. and is being cleaned out.

Marland Oil Co.'s No. 1 Carver, William Heath Survey in Hutchinson County, does not look any better after a 45-quart shot. The well is several miles north of production and is spraying 15 bbls. of salt water from 3,260 to 3,315 feet. It was shot with 45 quarts in that formation without changing the status of the well.

Twenty-five new oil wells in the Panhandle area gave that territory 5,278 bbls. of new production. Skelly Oil Co.'s semiwildcat in Carson was the big well of the week. Dixon Creek Oil Co.'s No. 48 Smith, south of the river in Hutchinson County, ranked second when completed as an 800-bbl. well.

Panhandle operations continue to show a steady decline and only a handful of new locations are being announced each week. Panhandle's increase in daily average production for the week came from gains in Carson and Wheeler Counties.

First Movement by Pipe Line

The first movement of oil out of Panhandle through a pipe line started April 14 when the Gulf Pipe Line Co. started oil through its part of the Gulf-Magnolia line out of the Panhandle. The line runs from south from Panhandle to Ranger where it ties into lines running to the Gulf Coast. The Gulf built the north half of the joint line and the Magnolia company the south half. Humble Pipe Line Co.'s line out of Panhandle is not complete, some oil is going through the north part of the line which is finished.

Carson County

Marland Oil Co.'s No. 7 Burnett-A, Section 116, Block 5, was completed at 3,170 to 3,200 feet flowing and swabbing 50 bbls. daily. Nunn and McAuley's No. 4 E. F. Bryan, Section 107, Block 4, was completed in lime and granite wash at 3,125 to 3,215 feet flowing 75 bbls. Skelly Oil Co.'s No. 1 H. Shaffer, Section 198, Block 3, is flowing 50 bbls. an hour from lime at 3,130-40 feet; total depth 3,157 feet. The well flowed 1,287 bbls. the first 24 hours.

A. O. M. A. ADDRESSES

Addresses before the American Oil Men's Association at Chicago are reported in this issue of The Oil and Gas Journal as follows:

By C. B. White....Page 39
By J. A. Stumpf....Page 86
By R. B White.....Page 143
By L. A. Stewart...Page 144

The address by Carl O. Beroth was published in The Oil and Gas Journal of April 14, Page 34.

Gray County

Empire Gas & Fuel Co.'s No. 1 Hughey, Section 129, Block 3, is flowing 100 bbls. from granite wash at 3,120-25 feet. The well made 10,000,000 feet of gas at 2,710-60 feet and increased to 35,000,000 feet at 3,070 feet. Humble Oil & Refining Co.'s No. 2 Binkley, Section 86, Block 3, is swabbing 175 bbls. from granite wash at 3,154-74 feet. The well had 7,000,000 feet of gas at 2,894 feet. Wilcox Pampa Oil & Gas Co.'s No. 22 Worley & Reynolds, Section 62, Block 3, flowed 300 bbls. from granite wash at 2,808-53 feet and is drilling at 2,853 feet.

Hansford County

Caldwell and associates' No. 1 Andriance, Section 21, Block 2, has been temporarily abandoned at 585 feet. Oklavania Oil Co.'s No. 1 Whitson, Section 2, was dry and abandoned at 3,510 feet. The well had 1,000 feet of water in the hole from 3,255 to 3,480 feet.

Hutchinson County

Four wells were completed north of the river in Hutchinson County. Dominion Oil & Gas Co.'s No. 1 Jasper, Section 23, Block M-23, is making 10 bbls. daily by heads from 3,033-35 feet and 3,058 feet; total depth 3,137 feet. Marland Oil Co.'s No. 5 W. S. Christian, Section 31-A, Block V, topped the pay at 2,910 feet and was shot with 40 quarts at 2,910-38 feet and is making 100 bbls. daily; total depth 2,960 feet. Phillips Petroleum Co.'s No. 6 J. J. Perkins (George) Section 26, Block 47, topped the pay at 2,840 feet and was drilled to 2,883 feet. The formation was shot with 120 quarts and is flowing and swabbing 150 bbls. daily. Prairie Oil & Gas Co.'s No. 2 Cal Merchant, Section 37, Block 47, was good for 75 bbls. at 2,735-65 feet and was shot with 120 quarts and the well is now swabbing 100 bbls.

The bulk of Panhandle completions were recorded in the area south of the river in Hutchinson County. Amarillo Oil Co.'s No. 5 Lee Bivins-B, Section 88, Block 46, was completed as a 75,000,000-foot gas well at 2,270-95 feet. The well had its first gas at 1,705 feet and 20,000,000 feet at 2,040 feet. Barnsdall Oil Co.'s No. 3 J. E. Pritchard, Section 19, Block Y, did 75 bbls. after a 25-quart shot at 2,747-55 feet. The well was a 30-bbl. well before the shot. Dixon Creek Oil Co.'s No. 42 Smith, Section 14, Block Y, is a 148-bbl. well, 46 per cent water from 2,915-75 feet. Same company's No. 48 Smith, Section 11, Block Y, a 25-bbl. well at 2,820-95 feet, was boosted to an 800-bbl. well with a 500-quart shot in the producing horizon.

Empire Gas & Fuel Co.'s No. 6 Johnson-B, Section 2, Block Y, was shot with 200 quarts at 2,830-94 feet and is swabbing 100 bbls. daily. Same company's No. 2 J. A. Whittenburg, Section 73, Block 46, is a 60-bbl. well after a 160-quart shot at 2,916-81 feet; total depth 3,000 feet. Franterhouse and Wetzel's No. 2 Johnson Brothers, Tract 3, M. Whitley Survey, is swabbing 80 bbls. daily after a 60-quart shot at 2,961-80 feet. Globe Oil & Refining Co.'s No. 1 J. A. Bost has been temporarily abandoned at 500 feet.

Prairie Oil & Gas Co. and associates' No. 12 Johnson Brothers-B, Section 69, Block 46, topped the pay at 2,723 feet and drilled to 2,758 feet and is swabbing 40 bbls. daily. Same operators' No. 13 Johnson Brothers-B, Section 69, Block 46, is making 120 bbls. daily from 2,770-84 feet. Same operators' No. 1 J. A. Whittenburg, Lot 28, M. Whitley Survey, is a 30,000,000-foot gas well at 2,550-2,845 feet. Prairie Oil & Gas Co.'s No. 3 J. A. Whittenburg, Lot 27, M. Whitley Survey, is an 8-bbl. well at 2,943-55 feet. Prairie company's No. 1-A J. A. Whittenburg, Lot 28, M. Whitley Survey, is a 40-bbl. well at 2,880-2,920 feet. Phillips Petroleum Co. and Coble Oil Co.'s No. 25 J. A. Whittenburg, Section 13, Block Y, was shot with 90 quarts at 2,959-95 feet and is making 300 bbls. daily.

Lipscomb County

Everett and associates' No. 1 Mrs. H. D May, Section 612, Block 43, has been temporarily abandoned at 960 feet.

Wheeler County

Magnolia Petroleum Co.'s No. 1 William and Laycock, Section 9, Block 24, was shot with 40 quarts at 2,255-70 feet and is spraying 10 bbls. daily. The well had its first gas at 2,170 feet and 5,000,000 feet of gas at 2,269-87 feet. Mid-Kansas Oil & Gas Co.'s No. 2 W. E. Curlee, Section 41, Block 24, flowed 648 bbls. the first 24 hours from granite wash at 2,301-25 feet and averaged 450 bbls. daily for four days. The well had 5,000,000 feet of gas at 2,275-80 feet; total depth 2,347 feet.

WILDCAT OPERATIONS IN PANHANDLE

Week Ending April 16, 1927

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block—	Remarks—
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Sur.	Spudded and temporarily abandoned.

BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW Sec. 33, Blk. B-3, B. S. & F. Sur.	Fishing 1,600 ft.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Shut down 1,980 ft.
Champlin Ref. Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4.	Cleaning out 3,180 ft.
Empire G. & F. Co.'s No. 1 Burnett-B.	Drilling 300 ft.
Empire G. & F. Co.'s No. 1 Burnett-C.	Set 12-in. casing 633 ft.
Empire G. & F. Co.'s No. 1 C. R. Garner.	Drilling 2,050 ft.
Empire G. & F. Co.'s No. 2 M. P. Co. fee-A, NE cor. SW Sec. 91, Blk. 4	Top lime 2,278 ft.; 200 ft. oil 3,080-85 ft.; pulling big pipe.
Empire G. & F. Co.'s No. 3 M. P. Co. fee-A, SE cor. SW Sec. 91, Blk. 4	Set 8-in. 2,051 ft.
Gulf Prod. Co.'s No. 1 Noel, SE cor. SW Sec. 198, Blk. 3.	Top pay 3,162 ft.; show oil; running 6-in.
J. E. Hughes Developing Co.'s No. 2 F. E. Percival, NW cor. E ½ NW Sec. 199, Blk. 3	Setting up rotary 1,050 ft.
Marland Oil Co.'s No. 1 Burnett-J, C NE NE Sec. 121, Blk. 5	Drilling 2,310 ft.
Marland Oil Co.'s No. 2 C. R. Garner, Sec. 198, Blk. 3.	Drilling 2,270 ft.
Marston Oil Co.'s No. 1 J. L. Noel.	Drilling 2,850 ft.
McMan O. & G. Co.'s No. 1 F. E. Percival, NE cor. W ½ NE Sec. 199, Blk. 3	Top pay 3,160 ft.; drilling 3,215 ft.; 1,800 ft. oil in hole.
McMan O. & G. Co.'s No. 2 F. E. Percival, NW cor. W ½ NE Sec. 199, Blk. 3	Drilling 3,005 ft.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Drilling 2,000 ft.
Republic Prod. Co.'s No. 1 Burnett, Sec. 116, Blk. 4	Topped pay lime 3,109 ft.; 600 ft. oil in hole; shut down 3,140 ft.
Roxana Pet. Corp.'s No. 1 Brown, Sec. 106, Blk. 4.	Run 6-in. 2,985 ft.
Skelly Oil Co.'s No. 2 H. Schafer, NW cor. NE Sec. 87, Blk. 4	Drilling 2,910 ft.
Skelly Oil Co.'s No. 3 H. Schafer, NW cor. NE Sec. 86, Blk. 4	Drilling 2,815 ft.
Skelly Oil Co.'s No. 4 H. Schafer, NW cor. Sec. 86, Blk. 4.	Drilling 2,770 ft.
Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, I. & G. N. Sur.	Rigged up and shut down.
The Texas Company's No. 1 J. L. Noel, Sec. 187, Blk. 3.	10,000,000 ft. of gas at 3,095 ft.; flowed 20 bbls. first 12 hours at 3,230-45 ft.; will deepen.
Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 200, Blk. 3	Rigging up.
Vitek Oil Co.'s No. 1 C. R. Garner, SW cor. Sec. 113, Blk. 4, I. & G. N. Sur.	Drilling 460 ft.
White Deer Oil Co.'s No. 3 Jordan-Brown, Sec. 104, Blk. 4.	Lime 3,118-30 ft.; 100 bbls. oil and small show water.

(Continued on Page 159)

DUNN TOOLAGRAM

OIL WELL PATENTED DUNN TOOLS TRADE MARK REG.

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DUNN
SAFETY AUTOMATIC
Spring Hook
No. 0
(Light Type, for Rods)

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Weight 20 lbs.
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DUNN SAFETY *means* DONE SAFELY

Bowlegs District Continues Increase

Crosbie Well Causes More Intensive Study of Earlsboro. Prairie Well Deepened to Salt Water

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The Oklahoma crude price structure is operating under conditions seldom witnessed, and two prices are being paid for crude. Last fall, when the first price reduction was announced, was the first instance in the history of the Mid-Continent that two crude prices were paid for the same oil over any considerable period of time. The present price situation had its inception April 7, and to date no other purchaser has met the schedule. Opinion of future actions by the purchasers is sharply divided.

In the fields, Seminole still holds the major interest, and the various pools of this field were hampered by the flood conditions which prevailed last week. The daily output ranged from 318,000 to 333,000 bbls. last week, the lower figure being registered on a day when conditions were particularly unfavorable and roads almost wiped out. The flood affected the wells which are being produced by means of the air-gas lift system, and it hampered their yield. The majority of these wells are located in the old Seminole City or 9-6 Pool, and this declined to 201,000 bbls., a new low figure.

The Bowlegs district continues to increase in output, and the completion of three news wells has put the production of that area up to 53,600 bbls. It still seems that this part of the Greater Seminole Field will make 75,000 bbls. daily by the end of the month.

Earlsboro Changes

The Earlsboro region of Seminole still presents a constantly changing picture. The well of J. E. Crosbie and others in the SW cor. NW, Section 9-9-5, started at 1,500 bbls. daily, and has caused a more intensive study of the Earlsboro region than any other single development. To the east of Earlsboro, the Magnolia Petroleum Co.'s No. 1 Holmsley, in Section 11-9-5, is making 6,200 bbls. daily and is pinched in. The well was drilled 5 feet deeper during the week, and responded with an output of 6,900 bbls. This has made the territory around Section 11 look very promising, and has caused numerous trades in leases. The Independent Oil & Gas Co. has fortified its position by the acquisition of an interest in two leases from the Margay Oil Co. for a price reported at $100,000 for a half interest.

Prairie Well Disappointing

The Prairie Oil & Gas Co.'s No. 1 Graham, SW cor. NE Section 24-9-5, southeast of Earlsboro, was drilled deeper with disastrous results. The well had been making 80 bbls. daily from two feet in the Wilcox sand, and when drilled eight feet further into the stratum it found salt water, and removed the menace of another Wilcox sand pool within the limits of Greater Seminole. The region around the Prairie well was the scene of an unusual condition in the Oklahoma fields. The Prairie well encountered the sand and made several small flows. Some of the adjoining leases were of short term, and expired this fall. Little time was to be lost if drilling was to be pursued. The producers attempted to obtain an extension of the leases, being of the opinion that fall would prove a more advantageous time to start drilling.

The Dixie Oil Co. has a show for a good Wilcox sand well in the Yeager district of Hughes County in No. 1 Bruner, SW cor. SW Section 17-8-10. Sand was touched at 3,923 feet, and the well is

The production of the Greater Seminole area by companies, leases and wells, giving the daily average output for the week ending April 8, follows:

Seminole 9-6

Company and Lease—	Wells	Prod.
Amerada:		
Fixico	4	3,893
Killingsworth	4	1,986
Rentie	4	3,056
Atlantic O. P. Co.:		
N. Cudjo	3	3,209
J. Cudjo	2	Off
Barnsdall Oil Co.:		
Carter	9	7,166
Jones	2	6,326
Carter Oil Co.:		
B. Carter	2	200
J. Carter	4	155
F. Carter	4	1,275
R. Cudjo	3	6,385
W. Cudjo	1	1,655
Gilliland	1	2,090
Grisso	7	6,435
Knappenberger	3	2,758
M. Killingsworth	7	17,922
G. Killingsworth	3	3,865
Lukes	3	4,850
Simpson	1	Off
Strothers	1	3,455
Vierson	3	925
Empire Gas & Fuel Co.:		
Wilson	3	5,123
Gypsy Oil Co.:		
Butler	3	1,162
Carter	8	2,810
Fixico	5	200
Harjo	2	1,472
Wolfe	5	4,435
Independent Oil & Gas:		
P. Fixico	3	496
Independent-Garland:		
T. Fixico	8	1,931
Independent and Interocean:		
Jones	4	812
Indian Terr. Illum. Oil Co.:		
Bowlegs	9	6,475
Goodin	4	736
Harjo	4	1,548
Jones	5	1,546
Reed	3	38
Kingwood-Roxana:		
Johnson	5	3,878
Magnolia Pet. Co.:		
Franks	2	2,460
Mid-Cont. Pet. Corp.:		
Rentie	8	3,345
Tayeche	7	1,510
Mid-Kansas Oil & Gas Co.:		
Pressley	1	822
Johnson	1	1,120
Philmack-McCulloch:		
Butler	1	367
Phillips Pet. Co.:		
Strothers	1	482
Prairie Oil & Gas Co.:		
Gross	5	375
Spencer	1	30
Strothers	5	8,005
Pure Oil Co.:		
Strothers	17	14,780
Roxana Pet. Corp.:		
Harber	1	280
Lashley	1	676
Sinclair Oil & Gas Co.:		
Carter	2	50
Cudjo A	6	1,960
Cudjo B	3	4,490
*Fixico	2	4,395
T. B. Slick:		
Cudjo	2	3,989
Franks	7	7,588
Giblet	1	3,007
*Half Transcontinental.		
Superior Oil Co.:		
Cudjo	4	6,578
The Texas Company:		
Mayhue	1	Off
Tidal-Osage Oil Co.:		
Carter	5	3,510
Fixico	7	6,150
Harjo	6	810
Mahardy	4	825
Tayeche	2	2,595
Turman Oil Co.:		
Cudjo	4	5,179
Grisso	1	1,848
Jones	3	6,484
Total	254	204,268

Searight Pool 10-6

Carter Oil Co.:		
Davis	5	9,555
Frazier	2	3,170
Kiker	1	30
Scott	1	50
Stewart	2	265
Gypsy Oil Co.:		
Cudjo	1	830
Mid-Continent Petroleum Corp.:		
Grayson	3	7,560
Prairie Oil & Gas Co.:		
Cannon	1	40
Carter	1	140
Houck	1	20
Kinkade	1	8,385
Pure Oil Co.:		
Aldridge	1	1,375
Searight et al.:		
Young-Blood	2	120
Sinclair Oil & Gas Co.:		
Polly	1	440
Twin State Oil Co.:		
Jennings	1	1,610
	30	33,600

Bowlegs Pool 8-6

Amerada Petroleum Co.:		
Rascoe	4	8,945
Carter Oil Co.:		
Bowlegs	1	3,220
Walker	1	3,160
Wise	1	3,145
Empire Gas & Fuel Co.:		
Lacey	1	4,907
Gypsy Oil Co.:		
Walker	2	5,852
Indian Terr. Ill. Oil Co.:		
Davis	2	9,189
Goforth	1	3,319
Livingston	2	6,318
Walker	2	4,395
Roxana Petroleum Corp.:		
Taylor	1	Off
Sinclair Oil & Gas Co.:		
Adams	1	Off
Bowlegs	1	1,170
Harjo	1	Off
	21	53,620

Earlsboro 9-5

Amerada Petroleum Co.:		
Anderson	3	12,354
Crosbie et al.:		
Bryant	1	1,564
Gypsy Oil Co.:		
Bora	1	Off
Earl	1	50
State Land*	3	12,930
Magnolia Petroleum Co.:		
Holmsley	1	6,152
Mid-Continent Petroleum Corp.:		
McCumber	1	1,365
Phillips Petroleum Co.:		
Graham	1	2,415
Prairie Oil & Gas Co.:		
Baker	1	55
Sinclair Oil Co. et al:		
Foreman	1	30
Shallow production	29	4,550
Total	43	41,465
Grand total	348	332,953

By Sands

Shallow	30	4,590
Hunton lime	48	8,800
Wilcox sand	270	319,563
	348	332,953

*Half Amerada.

Carter County

Magnolia Petroleum Co. has built the rig for No. 6 W. Hardin, NW cor. SW SW, Section 19-1s-3w. Skelly Oil Co.'s No. 2 Williams, SE cor. NW NW, Section 23-2s-3w, Carter-Knox area, is an 8-bbl. well at total depth of 3,000 feet, the oil coming from a series of broken sands at 2,176-2,942 feet. Magnolia Petroleum Co.'s No. 13 J. Lohman, NW cor. SW SE, Section 23-2s-3w, has been abandoned at 4,725 feet. No. 2 C. Morris, SE cor. NW NW, Section 22-2s-3w, was abandoned at 4,090 feet.

Creek County

L. C. Wheeler & King made location for No. 1 Morton, SE cor. NW, Section 1-14-9. Producers Oil Co. staked location for No. 1 Forres, SE cor. NW SE, Section 36-17-8.

Carter Oil Co.'s No. 4 Hohomer, CWL NE NE, Section 9-15-10, is dry and abandoned at 3,276 feet in the Wilcox topped at 3,200 feet. C. G. Tibbons' No. 6 Lucas, NW cor. NE SE, Section 31-15-9, is making 10 bbls. from the Layton sand at 1,213-48 feet after a shot of 120 quarts. Dixie Oil Co.'s No. 4 Francis, NW cor. SE SW SW, Section 5-17-10, had the Wilcox sand at 2,977-3,024 feet and is producing 100 bbls. T. C. M. Oil

TEST BETWEEN ARTESIA FIELD AND MALJAMAR HAS 1,500 FEET OF OIL

By Special Correspondent

ARTESIA, N. Mex., Apr. 16.—Over 1,500 feet of oil is standing in the Mid-Continent Oil Co.'s No. 1 Woolley, Jones, on the McIntyre permit in the C SW, Section 21-17-30. The bottom of the hole is 3,460 feet, completion of the well having been delayed for the past two weeks as the crew is pulling a dropped string of 10½-inch casing. All but 14 joints have been recovered, the tools going through this freely. This test is midway between the Artesia and Maljamar Fields.

After being shut down for a number of months, drilling has been resumed on the Skelly Oil Co.'s No. 1 Buelah Lynch permit in the NE NE, Section 22-17-31. This well, when opened up, flowed close to 125 bbls., cleaning the hole.

The Cap Rock Oil & Gas Corp.'s No. 1 Leonard Levers in Section 11-16-32 appears to be running high, drilling in the salt at 2,040 feet. Considerable acreage has changed hands around this test, the Humble Oil & Refining Co. being one of the purchasers. It bought 880 acres out of Sections 9, 10 and 15 in Township 16, Range 32.

Drilling continues slowly on the Inglefield, Bridges' No. 1 State in Section 4-17-34, with the bottom of the hole down 4,784 feet. The well swabbed 150 bbls. Thursday, this lowering the 4,000 feet of oil standing in the hole but little.

South of the Inglefield well considerable gas has been picked up in the Henderson, Dexter, Blair, Inc.'s No. 1 Wyatt permit in the SW SW, Section 34-17-33 at a depth of 4,762 feet. This company is resuming drilling No. 1 State in the south end of the Artesia Field, in Section 9-19-28, the hole being down 2,325 feet.

Lea County Location

The Texas Company has made another location in Lea County, this being on the Lockhart permit in the SE cor. SW, Section 5-22-38, which is 1½ miles west of the Texas line. This company is down 300 feet on the Robinson test in Section 25-16-32 and below 500 feet on No. 1 Rhodes in Section 22-26-37. It is ready to spud in No. 1 Jackson in Section 4-20-34.

The Maljamar Oil & Gas Corp. installed a flowing device on No. 1 Grace Mitchell in Section 5-17-32 which is making around 150 bbls. daily.

The Ohio Oil Co. has cleaned out No. 1 William Mitchell, in Section 18-17-32, and is drilling through the 4¼-inch pipe at a depth of 4,325 feet.

South of the Artesia Field, the Ohio Oil Co.'s No. 1 Marland on the Workman permit in Section 13-22-29 picked up a second body of salt and is drilling at 2,880 feet. The Marland Oil Co.'s No. 1 Hale in Section 11-20-30 is also drilling in the salt at 1,465 feet. The Covert test in Section 15-21-33 is shut down at 3,000 feet in salt, this being the present contract depth. It is understood the hole will be carried lower. The Exploration Co.'s No. 1 in the NE, Section 25-19-35 is fishing at 865 feet.

North of the Artesia Field, the Lackawanna Oil & Refining Co. is preparing to carry down No. 1 Gates in Section 17-16-27, which was shut down at 2,000 feet, the present contract depth.

Clark's & Grimm's No. 1 Daughtry permit in the NE SW, Section 3-17-27 is making about 1,000,000 feet of gas from around 1,000 feet, this blowing salt water 8 feet above the casing. Considerable trouble is being experienced due to a string of frozen pipe.

The Prosperity Oil Co., a Delaware concern, received from the State of New Mexico a certificate of foreign incorpora-

(Continued on Page 129)

There is one advantage in the fact that gasoline prices are, as most authorities agree, at bottom Prices can now move in only one direction—*up*

And when they do, the refiner who is able to feed his stock of low-grade crude, direct or topped, to his Dubbs Cracking Units and obtain the maximum yield of good Knoxless-Pullsmore gasoline will have the advantage over the refiner who must restrict his charging stocks to the higher priced gas oil and distillates with lower yields and higher costs

The refiner with Dubbs cracking equipment will be in no danger of seeing "red" when he sees his monthly balance sheet If your balance sheet is showing red—pink—or even pale black—there is one quick and sure remedy

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Owner of the Dubbs Process
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Co.'s No. 1 Johnson, NW cor. SE SW, Section 2-17-10, after being shot with 240 quarts made 20 bbls. from the Red Fork sand at 2,043-2,109 feet. Wilcox Oil & Gas Co.'s No. 5 Lindsey, NE cor. SE NE, Section 10-17-9, got the top of the Peru sand at 2,982 feet, drilled in to 2,010 feet and after a shot of 40 quarts made 40 bbls. Bu-Vi-Bar Petroleum Co.'s No. 1 Brown, SE cor. NE SW, Section 4-18-10, had a hole full of water in the Wilcox sand at 2,940-47 feet and has been abandoned. The Texas Company's No. 6 Weaver, SE cor. NW SW SE, Section 13-19-8, had sand from 2,188 feet to 2,240 feet and after a shot of 90 quarts, flowed 20 bbls. Sinclair Oil & Gas Co.'s No. 9 Riverbed, C SW NE, Section 6-18-7, made 15 bbls. after it was shot with 14 quarts in sand at 2,558-89 feet. Magnolia Petroleum Co.'s No. 13 Coker, CNL NW NW, Section 16-18-7, is a 20-bbl. well in sand at 2,578-84 feet. C. G. Tibbon's No. 1 Factor, NE cor. Section 29-15-8, was shot with 40 quarts in sand at 1,600-15 feet and made 2 bbls.

Garfield County

Sinclair Oil & Gas Co.'s No. 21 Kisner (East), NE cor. SE NW NE, Section 19-22-3w, has been completed in the Hoy sand at 1,385-89 feet, total depth 1,390 feet and is swabbing 50 bbls.

Garvin County

Magnolia Petroleum Co. has the rig up for No. 8 Wyatt, SW cor. NW NW, Section 13-1-3w.

Kay County

Wentz Oil Corp.'s No. 2 Harris, SE cor. NW, Section 31-27-2, is a rig being built. Marland Oil Co.'s No. 10 North (lease No. 1), SW cor. NE, Section 12-26-2w, in the Hubbard Pool, has been completed for 61 bbls. from the Layton sand at 2,965-85 feet. The well was shot with 30 quarts and failed to flow and was then put on the swab and made a maximum of 203 bbls. by swabbing. The Prairie Oil & Gas Co.'s No. 9 Smith "B," SE cor. NE SE, Section 1-26-2w, Hubbard Pool, made 606 bbls. from sand at 3,696-3,753 feet.

Okfuskee County

Sands Petroleum Co. has the rig on the ground for No. 1 Johnson, SW cor. SE NE, Section 28-12-10. Champlin Oil & Refining Co.'s No. 2 Jefferson, NW cor. Section 23-11-11, is making 230 bbls. from the Wilcox sand at 3,502-25 feet after it was shot with 20 quarts. Independent Oil & Gas Co.'s No. 1 Taylor, SW cor. NW, Section 14-11-11, a rig, has been abandoned. Cooper & Donnely's No. 1 Micco, NE cor. NW NE, Section 7-13-10, is a dry ho'e in the Wilcox sand 3,486-3,510 feet. G. F. Hahn's No. 1 Gano, a location, NW cor. SW NW, Section 36-12-7, has been abandoned.

Okmulgee County

Lakeside Oil Co. has the rig up for No. 2 Gill, C NW NW, Section 35-13-11. White Eagle Oil & Refining Co. and others made location for No. 1 Bugg, SW cor. SE SE, Section 19-14-11. A. D. McDonald's No. 1 Tiger, SE cor. Section 24-16-13, is a rig. H. A. Baker's No. 1 Lewis, NW cor. NE SW, Section 24-16-13, went through the Wilcox sand at 2,170-74 feet and has been abandoned in the Turkey Mountain sand at 2,293-98 feet. The Prairie Oil & Gas Co. made location for No. 2 Lewis, SW cor. NE NE, Section 25-13-11. W. A. George's No. 12 Stevens, NW cor. SW NE, Section 9-14-14, is dry at 1,795 feet. X-Ray Oil Co.'s No. 1-A Crume, NE cor. SW SE, Section 9-14-14, was completed for 3,000,000 feet of gas in sand at 1,836-91 feet.

Muskogee County

J. L. Selby has the rig on the ground for No. 2 Warner, NE cor. SE SW NE, Section 17-15-17. J. L. Selby's No. 1 Warner, NW cor. SW SW NE, Section 17-15-17, is dry in the Turkey Mountain sand at 2,008-46 feet. J. M. Foltz' No. 1 Sharner, SW cor. NW SW, Section 27-15-17, has been abandoned in the Turkey Mountain sand at 2,197-2,203 feet.

McIntosh County

Simpson Fell Oil Co.'s No. 1 Rich, SE cor. NE NE, Section 27-11-15, has been abandoned with a hole full of water in the Wilcox sand at 3,295-22 feet.

Haskell County

San Bois Gas Co. has a rig on the ground for No. 1 Johnson, NW cor. Section 26-8-20.

Osage County

The Texas Company is building the rig for No. 1, SW cor. SE, Section 27-27-6, in the Burbank Pool. Pawhuska Oil & Gas Co. has the cellar dug for No. 43, SE cor. SW, Section 34-26-9. The Texas Company has moved the rig out for No. 1, NE cor. NW, Section 30-25-8. The rig is a'so on the ground for No. 2, SE cor. NE NW; for No. 3, NE cor. SE NW, and No. 4, SE cor. NW. The Texas Company has a rig on the ground for No. 1, SW cor. SE, and has made location for No. 2, SE cor. SW SE. Tidal Osage Oil Co. is building the rig for No. 3, NE cor. SW, Section 20-24-9. Sam Sitrin has made location for No. 1, SE cor. NW, Section 5-22-10. The Prairie Oil & Gas Co. has made the location for No. 14, NW cor. NE SE, Section 21-25-6.

Kewanee Oil & Gas Co.'s No 8, NE cor. NW, Section 34-27-6, in the Burbank Pool, had the Burbank sand at 2,884-2,925 feet, drilled to 2,927 feet and made 429 bbls. naturally. The well was shot with 100 quarts and made 750 bbls. Peters and others' No. 2, NW cor. NE, Section 20-27-6, drilled through the Burbank sand at 2,898 2,960 feet to the total depth of 3,013 feet and after a shot of 120 quarts is making 15 bbls. A. G. Oliphant's No. 7, NW cor. SE SE, Section 19-25-8, is making 100 bbls. from the Burgess sand at 2,496-2,510 feet. Garnett Oil Co.'s No. 1, SE cor. Section 3-25-9, is dry at 2,190 feet. Indian Territory Illuminating Oil Co.'s No 363, SW cor. SE SW, Section 27-25-8, is making 5,500,000 feet of gas from sand at 635-59 feet. American Oil & Development Co.'s No. 1, NW cor. NE, Section 24-23-10, missed the Bartlesville sand and has been abandoned in the Mississippi lime at 1,965 feet. Delmar Oil Co.'s No. 1-A, NW cor. NE, Section 20-23-10, an old well, was deepened to the Wilcox sand at 2,474-92 feet and is making 25 bbls. No. 3, SE cor. SW SE, Section 17-23-10, is making 25 bbls. from the Wilcox sand at 2,532-53 feet. Indian Territory Illuminating Oil Co.'s No. 1, NE cor. Section 28-23-9, has been abandoned at 612 feet. Skelly Oil Co.'s No. 5, SW cor. NW SE, Section 7-21-11, is a dry hole in the Wilcox sand at 2,553-55 feet. Phillips Petroleum Co.'s No. 1, SE cor. NE NE, Section 15-21-9, had the top of the Bartlesville sand at 2,250 feet, drilled to 2,305 feet and is making 10 bbls. after two shots. Continental Oil & Gas Co.'s No. 12, NE cor. SW NE, Section 28-20-12, is a 20-bbl. well in the Wilcox sand at 2,027-53 feet. The Prairie Oil & Gas Co.'s No. 3, NW cor. NE NE, Section 31-25-8, is producing 100 bbls. from sand at 2,432-57 feet.

Pawnee County

Magnolia Petroleum Co. made location for No. 2 Vickers, NW cor. SW NE, Section 15-20-6. Josey Oil Co.'s No. 3 Scott, SE cor. NW NW, Section 22-20-6, has been completed for 18 bbls. from sand at 3,072-3,111 feet. Champlin Oil & Refining Co.'s No. 1 Goodchief, NE cor. SE SW, Section 20-20-5, had sand at 3,762-90 feet with a show of water and was plugged back to 3,720 23 feet and shot with 10 quarts after which it made 15 bbls. Bu-Vi-Bar Petroleum Co.'s No. 1 Redd, NW cor. SE, Section 26-22-5, is dry and abandoned at 3,540 feet.

Payne County

Shaffer Oil & Refining Co.'s No. 6 Sharrum, NE cor. SE NW, Section 5-17-4, drilled to total depth of 4,249 feet and was plugged back to sand at 4,184-90 feet and completed for 70 bbls.

Tulsa County

Holmes and others' No. 2 Robinson, CNL NW SE, Section 14-19-10, has been abandoned at 1,805 feet. No sand was found.

Woods County

Sooner States Oil Co. and E. R. Black have a rig up for No. 1 Marcum, C SW Section 20-27-15w.

Noble County

The Prairie Oil & Gas Co.'s No. 1 Ableidinger, NW cor. SW, Section 22-21-2w, has been abandoned at 4,635 feet.

Seminole County

The Prairie Oil & Gas Co. made location for No. 2 Stidham, SE cor. SW NE,

(Continued on Page 138)

WILDCAT WELL IN HARPER COUNTY FEATURE OF WEEK IN KANSAS FIELD

By J. L. Dwyer
Staff Correspondent, Kansas Fields

A wildcat well in Harper County was the most interesting news of the week in the Kansas fields. Berry Petroleum Co.'s No. 1 Burken, NE cor NW Section 19-32-5, has a good showing of oil at 4,235 feet. The identity of the sand is undetermined, but it is thought likely to be the Wilcox.

Additional interest is being displayed in the Lost Springs district of Marion County on account of the production of the Phillips Petroleum Co. and Harwood & Winters discovery well making 270 bbls. on the pump. This well is No. 1 Razineck, SW cor. NW Section 22-17-4. Previous to its being drilled deeper it had been making 50 bbls. daily.

Butler County

Rogers and others' No. 15 Drum Bitler, NE cor. NW SE, Section 20-26-8, is drilling at 900 feet. No. 16 Drum Bitler, SW cor. SE, Section 20-26-8, is spudding. Federal Oil Co.'s No. 11 Drum Bitler, CNL NE NE, Section 31-26-8, is spudding.

Phillips Petroleum Co.'s No. 1 Marmane, SW cor. SE NW, Section 20-26-3, is dry at 2,888 feet. Rogers and others' No. 14 Drum Bitler, SW cor. NW SE, Section 20-26-8, was completed for a 75-bbl. well in sand 2,705-49 feet after a shot of 120 quarts. Tidal Oil Co.'s No. 2 Worrell, SW cor. NE SE, Section 12-27-7, was shot with 60 quarts and is producing 15 bbls. from sand 2,731-68 feet. Mid-Kansas Oil Co.'s No. 1 Peak, NE cor. NW, Section 33-28-7, is a dry hole at 3,261 feet. Douglas Oil Co. and others' No. 1 Davis, NW cor. SW NE, Section 15-29-3, has been abandoned at 3,104 feet. Ramsey Petroleum Co.'s No. 2 Plummer, SE cor. NE, Section 5-29-5, is dry and abandoned in sand 3,313-18 feet.

Chase County

Phillips Petroleum Co. made location for No. 1 Lipps, C NE SW, Section 29-18-7. Sheedy and others' No. 2 Atyeo, SE cor. NE NE, Section 36-21-9, was shot with 40 quarts and made 25 bbls. in sand 2,115-22 feet.

Coffey County

Sheedy and others' No. 1 Young, C SW, Section 11-23-13, made 15 bbls. from sand 1,798-1,848 feet when shot with 120 quarts. Harper and others' No. 1 Peek, SE cor. SW SW, Section 16-23-14, is producing 50 bbls. from sand 1,631-46 feet.

Cowley County

Roxana Petroleum Corp.'s No. 1 Carlson, SW cor., Section 21-30-3, was brought in for 90 bbls. from sand 2,961-65 feet. Payne & Helmerich's No. 1 Ward, SW cor. SE SE, Section 24-30-6, is dry and abandoned at 3,405 feet. Independent Oil & Gas Co.'s No. 1 Swenson, NW cor. SW SE, Section 15-32-4, an old well deepened, is making 5,000,000 feet of gas from sand 2,604-14 feet. McNabb and others' No. 2 Wallace, NE cor. SE. NE, NW, Section 22-32-4, was shot with 40 quarts in sand 2,292-2,355 feet and made 60 bbls. Derby Oil Co.'s No. 1 De Bard, SW cor. SE NE, Section 35-34-3, is a dry hole at 2,056 feet.

Elk County

Pure Oil Co.'s No. 20 Chaffine, SW cor. SE, Section 14-31-10, is making 30 bbls. from sand 1,638-48 feet. Frazier, Fowler and others' No. 4 Webb, NE cor.

(Continued on Page 137)

EBANO SECTOR HAS 10,000-BBL. WELL; NINETEEN COMPLETIONS IN MEXICO

By George Blardone
Staff Correspondent, Mexican Fields

TAMPICO, Mexico, Apr. 15.—Nineteen completions in the northern fields of Mexico sums field operations during the past week. Six producers and 13 failures is the result. The new production is rated at 15,550 bbls.

The best well of the week was Mexican Petroleum Co.'s No. 113 La Dicha, in the Ebano sector, which is rated good for 10,000 bbls. at 2,010 feet; its No. 125, same, good for 2,000 bbls. at 2.285 feet; its No. 153 rated 1,000 bbls. at 1,802 feet, and its No. 137 is a poor fourth, being good for say 50 bbls. at 2,460 feet. International Petroleum Co.'s No. 297, Lot 8, Cacalilao, is 1,000 bbls. at 1,975 feet. Mexican Sinclair Petroleum Corp.'s No. A-173, Lot 2, Cacalilao, is a shallow well at 1,750 feet, rated 1,500 bbls.

The failures in the northern fields follow: La Corona Petroleum Co.'s No. 1, Lot 195, Cacalilao is a failure at 2,935 feet. Mexican Sinclair Petroleum Corp.'s No. 178, Lot 2, Cacalilao is a failure at 1,875 feet. Vera Cruz Mexican Oil Co.'s No. 11 Buena Vista, Panuco, is dry at 2,275 feet. Cia. Pet. Franco Espanola, No. 82 Limon is dry at 2,400 feet. Mexican Petroleum Co.'s No. 40, Lot 1, Cacalilao is a failure at 2,220 feet. In its extensive Ebano sector, Mexican Petroleum's failures follow: No. 16 Ebano, salt water at 2,640 feet; No. 105 La Dicha, failure at 2,440 feet; No. 109 drilled into salt water at 2,470 feet; No. 116 East Dicha is completed at 2,300 feet. It will be tubed and may make a small producer. The company's No. 15-A La Pez is a fluid failure at 2,500 feet; Nos. 123 and 138 Conteca are dry holes at 2,380 and 2,790 feet respectively.

Huasteca Petroleum Co.'s No. 91 Tierra Blanca in the south fields is being tested at 1,946 feet, where the drill was stopped in a grey and brown lime. There were no other completions in the south fields.

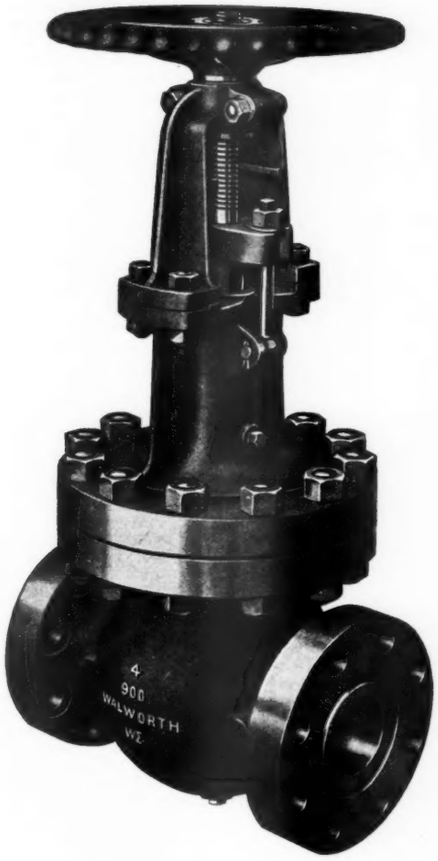
Panuco-Cacalilao

In the Panuco-Cacalilao sectors of the northern fields drilling operations are best epitomized as follows: Cia. Petroleum Francia Mexico, No. 21, Lot 4 Tanchicuin, has shut down for the time being at 2,004 feet, in gray lime; its No. 23, Lot 1, Lomas y Llanos, cemented 8-inch in the San Felipe at 1,600 feet; its No. 24 Las Piedras has been shut down for observation at 1,940 feet, where it is showing some oil in the San Felipe beds; its No. 26, Lot 2, E. Maguabes, is in gray shale at 700 feet. East Coast Oil Co.'s No. 233 Halcon cemented 8-inch in gray shale and shells at 1,305 feet. International Petroleum Co. has the following in Cacalilao: No. 298, Lot 4, is in gray lime at 2,000 feet; No. 300, same lot, cemented 10-inch in gray lime at 1,180 feet; No. 303, Lot 8, is in gray lime at 1,645 feet; No. 304, same, is in gray shale at 425 feet; No. 305, same, is rigging, and No. 309 cemented 8-inch in gray lime at 1,225 feet. Cia Petroleum Chileno Mexicano's No. 42 Delicias, Panuco, is in gray lime with head shows at 1,760 feet.

Mexican Sinclair Petroleum Corp.'s op-

(Continued on Page 133)

WALWORTH SIGMA STEEL WEDGE GATE VALVES



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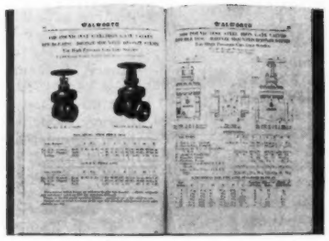

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Laredo May Have Four New Oil Areas

Good Showings Found in Southwest Texas Far From Present Production. Another Long Gas Line Announced

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 18.—Four gas wells completed in the Laredo district last week added 105,000,000 feet of gas and two oil wells added 85 bbls. of oil to production of that district. In the San Antonio district, eight oil wells, two in the Luling Field, two in Somerset and four in Rockdale, added 214 bbls. initial oil production. None of completions had any unusual features.

The Houston Oil Co. is moving three rigs to the Kingsville Field where it has lately acquired acreage and has announced a second gas line from Cole Field to Houston, starting with 12½-inch and enlarging to 20 and to cost $20,000,000.

Surveyors of the Humble Oil & Refining Co. are in Medina County surveying for oil pipe line from McCamey to Ingleside.

Four new producing spots are threatened in the Laredo district. The Texas Company's No. 5 Jennings in Zapata County, at 1,461 feet, filled three joints with Mirando grade crude. It is 8 miles west of the Randado Pool, the nearest oil production. Killam and Maddox No. 1 Bruni, one-half mile south of Bruni station, in Webb County, at 528 feet, came in wild gasser. Total depth of hole 1,400 feet. It is now closed in. It is 2 miles west of the Cole gas field, producing at 1,700 feet and the shallowest important showing ever found at Laredo. Cole Petroleum Co. tested No. 36 Benavides in Webb County, 3½ miles northwest of Bruni, and got a big gas well in wildcat territory. The Humble tested No. 4 Kohler, located on Survey 400, Duval County, at a total depth of 2,707 feet. It made 250 bbls. fluid, of which 30 is oil. It is 8 miles north of Cole Field. Alamo Drilling & Leasing Co.'s wildcat in Karnes County, 50 miles from production, has 80 feet of gas showing oil at 1,885 feet total depth. Will set and test. Fourteen new wildcat locations in San Antonio territory were announced last week, a rather large number, considering conditions.

Cole Gas Field—Duval

Cole Petroleum Co.'s No. 35 Benavides, Survey 21, Block 4, located 150 feet to southeast lines and 450 feet to southwest lines, is drilling at 500 feet; No. 36 Benavides, Survey 412, Block 14, at 169 feet to east line and 266 feet to north line, at 2,030 feet, tested big gasser; derrick is up in Survey 21, Block 6, at 150 feet to southeast lines and 450 feet to southwest lines; location has been made in Survey 10, Block 12, for No. 38 Benavides; No. 40 Benavides, Survey 20, Block 7, at 660 feet to northwest and southwest lines, is drilling at 1,300 feet; location has been made for No. 41 Benavides in Survey 18, Block 8, at 660 feet to northwest and northeast lines, and for No. 42 Benavides in Survey 23, Block 2, at 660 feet to northwest and northeast lines. Barkley-Meadows-Morgan-Gulf's No. 3 King Harper, Survey 323, is location, being 150 feet to NW cor. Houston Oil Co. is moving on for No. 7 Benavides, in Survey 10, Block 16, at 155 feet to southeast and southwest lines. Killam-Maddox's No. 1 Bruni, Survey 4, Block 5, at 150 feet to northeast and southeast lines, is drilling at 1,000 feet. Houston Oil Co.'s No. 1-C Rosa Benavides, Survey 20, Block 4, at 660 feet to southwest and southeast lines, has spudded in and set surface casing at 80 feet.

O'Hearn & Seacord Pool

Magnolia Petroleum Co.'s No. 2 Benavides, Survey 174, Block 7, located 330 feet to northeast lines and northwest lines, has been spudded in. O. W. Killam's No. 1 Bruni, Survey 585, at 600 feet to east line and 150 feet to north line, about 1 mile southwest of the discovery well, is drilling at 1,800 feet. Moody Oil Corp.'s No. 1 J. Benavides, Mesquite ranch, Subdivision 1, Block 40, which was reported abandoned at 1,850 feet, has moved back and resumed drilling.

Piedras Pintas Salt Dome

Humble Oil & Refining Co.'s No. 1 Carrillo, Survey 82, located 300 feet to east line and 3,200 feet to north line, has been spudded in and is drilling at 300 feet.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 12 Merchants State Bank, Survey 415, is testing at 1,215 feet. Livingston-Ritchson's No. 1 Palacious, Survey 287, Block 18, at 150 feet to NW cor., located 2,000 feet east of the line of production, is on sand at 1,360-65 feet.

Henne, Winch & Fariss Pool

Magnolia Petroleum Co.'s No. 27 Martinez, Survey 276, located 1,750 feet to east line and 2,525 feet to north line, is drilling at 2,062 feet.

Kitselman & St. Albans

Edward St. Albans' No. 7 Lopez, Share 1, Block 7, located 750 feet to south line and 916 feet to west line, has derrick up; location has been made in the same block at 1,058 feet to south line and 947 feet to west line, for No. 8 Lopez. K. & S. Corp's No. 57 Holbien, Survey 17, Block 40, located 330 feet to NE cor., is drilling at 2,398 feet. Associated Oil Co.'s No. 3 Martinez, Share 1, Block 18, located 800 feet to west line and 150 feet to north line, has completed fishing job at 2,142.5 feet and is being placed on the pump.

Alworth Pool

Magnolia Petroleum Co.'s No. 22 Merchants State Bank, Survey 236, located 450 feet to west line and 150 feet to south line, has been spudded in. Alworth Brothers' No. 7 M. Garza, Survey 39, Block 5, at 385 feet to northwest lines and 135 feet to southwest lines, elevation 492.8 feet, has spudded in and is on the sand at 1,017 feet and set casing.

Schott Pool—Webb

Laredo Oil Co.'s No. 12 J. M. Garcia, NW SW Survey 458, located 760 feet to west line and 160 feet to north line, is drilling at 1,294 feet. Jones-Garcia Oil Co. is rigging up in Survey 463 at 150 feet to NE cor. for No. 3 Garcia. Magnolia Petroleum Co.'s No. 6 Garcia, Survey 58, located 1,990 feet to west line and 440 feet to north line, has a sand at 1,920-22 feet and has set casing.

Aviator or Bruni Tracts

Ball and others have derrick up for No. 1 Puig in Block 58 at 150 feet to SW cor. Edward St. Albans' No. 2 Puig, Evans tract, 450 feet to east line and 150 feet to south line, is testing at 1,869 feet. Suladie Drilling Co.'s No. 1 Puig, Block 49, at 200 feet to south line and 350 feet to east line, has set casing at 1,640 feet. H. E. Neal's No. 1 Bruni, Block 41, at 150 feet to NW cor., is drilling at 1,801 feet. Ray Woods has derrick up for No. 1 Puig, Block 5, of Puig ranch, at 150 feet to NW cor.

Albercas Pool

O. W. Killam's No. 1 Bruni, Block 65, Albercas grant, 1,470 feet to SW cor., at 2,158-67 feet, tested 30,000,000 feet of gas through Halliburton tester and is setting casing; No. 2 Bruni in Block 65, at 2,070 feet to west line and 1,470 feet to east line, has derrick up and location has been made in Block 64 at 150 feet to north line and 450 feet to west line, for No. 3 Bruni.

Mirando Valley Pool

J. L. Johnson and others' No. 1 Anderson, Survey 2,363, Block 6, located 150 feet to SW cor., is standing at 1,881 feet waiting on casing.

Carolina-Texas Field

D. J. Simmons' No. 2 de la Garza, Survey 335, Block 19, located 150 feet to SW cor., has set 10-inch casing at 70 feet. T. P. Morgan's No. 1 de la Garza, Survey 335, Block 23, at 150 feet to SE cor., has completed whipstocking and has reached the sand at 2,303 feet that showed oil in the old hole and set casing. Houston Oil Co. is moving on in Survey 268, Block 14, at 450 feet to south line and 900 feet to east line, for No. 1 "A" Barnsley. Breen, Ingersoll and others are moving on in NW NE NW, Survey 684, at 150 feet to NW cor., for No. 1 Webster.

Mirando Valley Pool—Zapata

O. W. Killam is making location in Survey 74 for No. 4 Hinnat. The Texas Company's No. 5 Jennings, Cerrito Blanco grant, 10,700 feet to southeast lines and 7,000 feet to southwest lines, at 1,461 feet, filled up three joints with crude.

Charco Redondo Field

Harlingen Oil & Gas Co.'s No. 5 Martinez is drilling at 850 feet.

Luling Field—Caldwell County

United North & South's No. 1 Kelly is drilling at 6,610 feet; No. 1 Tiller is drilling at 6,100 feet. Magnolia Petroleum Co.'s No. 18 Trammell, Reaville Survey, located 200 feet to SE cor., is drilling at 2,132 feet; No. 14 Proctor, J. Henry Survey, 300 feet southwest of No. 9, is drilling at 2,062 feet; No. 20 M. Moore, J. Henry Survey, 300 feet southwest of No. 12, has been completed making 65 bbls.; No. 6 Roberts, H. Cottle Survey, 600 feet northwest of No. 5, has been completed at 2,132 feet, making 50 bbls.; No. 3 Carter is location in H. Cottle Survey, 500 feet northeast of No. 2.

Rockdale Field—Milam County

W. T. Ramsel Oil Co.'s No. 4 Gohman, offsetting No. 4 Kevil, has been cemented ready to drill in. Kent-Middleton's No. 15 Strelsky has been completed making 35 bbls. Henry Davis' No. 4 Billy Smith, offsetting No. 1 John Hicks, has set casing in preparation to drilling in. Chicago Oil & Land Co.'s No. 6 Gambill, offsetting No. 3, is rigging up; No. 5 Gambill, on the east line of the Gambill tract, has been spudded in. Coffield-Hale & Noack's No. 1 Vance, SW cor. of lease, is rigging up. Fritz Fuch's No. 3 Lon Hudson, T. S. Arnett Survey, 150 feet to NE cor., has been completed an average producer, around 25 bbls. Noack Oil Co.'s No. 4 Seelke, T. J. Chambers Survey, 300 feet east of No. 3, is rigging up. Coffield & Hale's No. 1 Alford, north of city limits on the Brushy road, is drilling at 600 feet; No. 2 John Hicks, offsetting No. 1 on the north, has been drilled in and is estimated a 20 to 40-bbl. producer. Kent-Middleton's No. 1 south of the city limits in wildcat ter-

(Continued on Page 145)

PROGRESS OF WILDCAT OPERATIONS IN FIELDS OF SOUTHWEST TEXAS

By B. D. Stevenson

Duval County

Schlessinger Oil Corp. is making location in Survey 60 for the No. 2 Hahl. George B. Pickett is making location in NW cor. of Ball ranch for No. 1 Ball. Ralston M. Talbott's No. 1 Margarite, Survey 4, located 2,500 feet to northwest lines and 1,320 feet to northeast lines, is standing at 1,607 feet. Humble Oil & Refining Co.'s No. 12 Singer, Survey 4, located 2,600 feet to north line and 2,000 feet to west line, is drilling at 1,800 feet. Humble-Reiter-Foster's No. 4 Kohler, Survey 400, located 660 feet to SW cor., at 2,697-2,707 feet tested 250 bbls. of fluid of which 30 bbls. was oil; No. 5 Kohler, Survey 395, at 1,080 feet to east line and 530 feet to south line, is drilling at 1,893 feet. Humble Oil & Refining Co.'s No. 2 Welder-Woods, Survey 102, located 5,280 feet to south line and 4,500 feet to east line, is drilling at 175 feet.

Jim Hogg County

Holden and others' No. 3 Jones, Share 27, Block 136, at 330 feet to east lines and 440 feet to north line, is drilling at 1,360 feet. Hamilton and others' No. 1 Holbien, Block 44, Hamilton Subdivision, at 158 feet to south line and 363 feet to west line, is drilling at 1,400 feet, previous report in error.

Webb County

Cintex Petroleum Co.'s No. 1 Peal, Survey 72, Block 5, at 150 feet to SE cor., is drilling at 2,050 feet. Rio Grande Oil Co. is moving on to resume drilling at 1,600 feet in No. 1 Urbahn in Santo Tomas tract at 10,000 feet to south line and 20,000 feet to east line. O. W. Killam's No. 1 Billings, SE NW, Survey 43, at 150 feet to south line and 750 feet to west line, is drilling at 2,340 feet.

Starr County

Commonwealth Oil Co.'s No. 1 Garcia, Survey 538 (formerly T. C. Hadley) has resumed drilling at 140 feet. Southern Exploration's No. 2 Russell, Share 173 B, Porcion 69 at 150 feet to north line and 950 feet to west line, is shut down to wait orders. Milham Corp.'s No. 1 Guerra, Porcion 107, at 14,520 feet to south line and 1,320 feet to east line, is drilling at 2,925 feet; No. 2 Salinas, Porcion 111, SE cor., is drilling at 2,925 feet. Sterling & Suladie's No. 1 Yzaguirre, Block 8, Sterling & Suladie Subdivision at 1,320 feet to SW cor., is standing at 3,011 feet, preparing to drill deeper.

Zapata County

Mission Oil Co.'s No. 1 Slator, Borrego Survey, Block 16, at 4,577 feet to southwest lines and 11,853 feet to southeast lines, is drilling at 2,050 feet. Fred Thomey-Edouard Raymond are making location for test in Uribe Grant. Buffalo Erie Syndicate has made location in Block 2, at 760 feet to northeast lines and 250 feet to southeast lines, for No. 3 Martinez.

Atascosa County

Grayburg Oil Co.'s No. 21-B Hartung, Survey 1172, at 1,465 feet to west line and 740 feet to south line, is drilling.

Bexar County

Witherspoon Oil So.'s No. 5 A. M. Pyron, Survey 274, Somerset Field, 200 feet to CWL, is drilling at 1,796 feet. N. A. Saigh has completed No. 1 J. Frees in Survey 49, Somerset Field, making 4 bbls., and has made location for No. 2 J. Frees. A. R. Beall trustee's No. 1-A Ackerman, Survey 133½, 250 feet east of the White road, is drilling at 200 feet.

Bastrop County

The Texas Company's No. 1 Goertz, Survey 349, at 200 feet to west line and 150 feet to south line, is drilling below 1,000 feet. Neal A. Nelson's No. 1 Arthur Naumann, 5 miles south of Smithville, is shut down at 1,030 feet.

Bee County

Nichols & White's No. 1 Hicks, Hicks-

(Continued on Page 138)

Production of Gulf Coast Declining

Spindletop Shows Drop of 10,400 Bbls. Since April 1, While Area as Whole Shows Decrease of 6,560 Bbls. Daily

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 18.—Whatever may be said about the production of light gravity crude increasing until it has reached the danger stage, does not apply to the heavy gravity Gulf Coast product. In this division the output has been steadily declining. There has been a decrease of 6,560 bbls. during the first half of April. The deep sands section of the Spindletop Pool shows a decrease of 10,400 bbls. in the daily average since April 1.

The gross stocks of Gulf Coast crude on April 1 were 17,147,957 bbls., of which 11,764,124 bbls. were in steel tanks and the balance in earthen storage. These figures compare with a total of 16,431,266 bbls. on March 1 last and 15,206,720 bbls. on April 1, 1926. The Spindletop Pool is credited with 4,015,397 bbls. of the total on April 1 this year against 3,751,815 bbls. on the same date one year ago.

Wells completed during the week of April 16 total 35 against 24 during the previous week. Of these nine are recorded as dry and four saltwater wells. Five of the failures were in semiwildcat territory. The new production totals 7,970 bbls., or 2,295 bbls. less than the previous week. Six holes are bailing at the close of the week.

The estimated daily average gross production for the week of April 16 in the Gulf Coast region is placed at 142,785 bbls., a decrease of 4,500 bbls. from last week's estimate. The Spindletop Pool is off 6,500 bbls for the week. West Columbia 145 bbls.; and Big Creek 700 bbls. Pools showing increases are: Goose Creek, 1,150 bbls.; Hull 100 bbls.; Lockport, 1,400 bbls.; Orange 515 bbls.; Nash 125 bbls.; Sour Lake 165 bbls.; South Liberty-South Dayton, 120 bbls.

The following is the estimate for each pool:

Pool—	Daily Av.
Boling	1,760
Batson	1,400
Blue Ridge	3,375
Big Creek	4,800
Barber Hill	1,100
Dayton	40
Damon Mound	935
Edgerly, (La.)	620
Goose Creek	8,900
Humble	4,200
Hull	16,250
High Island	450
Jennings, (La.)	910
Lockport, (La.)	8,000
Markham	350
Nash	1,025
Orange	5,600
Orchard	35
Pierce Junction	8,000
Piedras Pintas	100
Spindletop	46,500
Saratoga	1,160
Sour Lake	5,050
South Liberty-South Dayton	3,770
Stark, (La.)	1,400
Vinton, (La.)	5,350
West Columbia	9,975
Welsh-Anse La Bute, (La.)	55
*Miscellaneous	1,675
Total	142,785

*Includes Nacogdoches, Washington and Kleberg Counties in Texas; Cameron, Calcasieu and Iberia Parishes in Louisiana.

The South Louisiana Pools are credited with 16,735 bbls. of the gross, which is an increase of 790 bbls. over the previous week.

Wells Completed or Bailing

Five tests drilling on or around new domes were abandoned during the week, all of them at shallow depths. At Moss Bluff Dome in Liberty County, the Union Sulphur Co. quit No. 5 Kyle in salt at 795 feet. The Bell Oil Co. abandoned No. 1 Eaton at 1,425 feet. The Gulf Production Co. pulled No. 10 Thomas off the Fannette Dome in Jefferson County at 1,190 feet. The same company abandoned No. 1 Wolff off the Long Point Dome in Fort Bend County at 911 feet. In the Raccoon Bend district in Austin County, the Humble-Valley Oil Co.'s joint No. 3 Austin College was temporarily abandoned at 1,030 feet.

The Rycade Petroleum Co.'s No. 13 Wisdom, Nash Dome on the line of Fort Bend and Brazoria Counties is heading 350 bbls at 3,680 feet. The other wells in that pool, which by the way is held exclusively by the Rycade company, are producing from sands from 400 to 600 feet deeper.

The Texas Company's No. 3 Fee in the Big Creek Pool in Fort Bend County, is bailing at 4,000 feet.

In the Blue Ridge Pool, in Fort Bend County, just over the line from Harris County, the Gulf Production Co.'s No. 8 West-Schenck on the south flank is pumping 75 bbls. at 3,900 feet. W. E. Woodruff's trustee No. 1 Adams bailed dry at 450 feet.

In the Pierce Junction Pool, 8 miles south of Houston, the Gulf Production Co.'s No. 20 Taylor on the east flank is making 75 bbls. at 3,800 feet. Smith and others' No. 1 Parsons is pumping 100 bbls. at 4,250 feet.

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 56 Smith on the east side is pumping 60 bbls. at 4,150 feet. No. 31 Gilliard peninsula was abandoned at 3,000 feet. The Gulf Production Co.'s No. 34 Beaumont on the bay shore is making 100 bbls. at 2,700 feet. Its No. 27 Smith is bailing at 2,550 feet.

Only one well was completed in the Hull Pool. It is the Gulf Production Co.'s No. 19 Baldwin, flowing 700 bbls. at 3,200 feet.

Southwest Fields

The estimated daily average gross for the Southwest Fields is 37,975 bbls., an increase of 1,045 bbls. over last week. Practically all the increase is in the Mirando district. The estimate for each field is as follows:

Field	Dly. Avg.
Luling	18,200
Mirando, (Webb, Jim Hogg, etc.)	15,000
Somerset	1,250
Calliham	40
Rockdale-Minerva	960
Lockhart, (Lytton Springs)	2,300
Miscellaneous	225
Total	37,975
Grand total for week	180,760
Grand total last week	184,217
Net decrease	3,457

Spindletop

Only one well, and a small one at that, was completed in the deep sand section of the Spindletop Pool during the week. The Gulf Production Co's No. 4 Mann is good for 120 bbls. at 2,700 feet. The same company's No. 9 Oakwood is bailing at 5,050 feet. The Atlantic Oil Producing Co.'s No. 2 McLean is being put on air after being work over at 2,950 feet.

The Yount Lee Oil Co. has 14 wells drilling on the McFaddin, Gladys and Davis leases and is starting No. 27 Gladys.

The Atlantic Oil Producing Co.'s No. 8 McLean is drilling at 4,700 feet; Nos. 10 and 11 standing at 4,150 and 5,050 feet, respectively; Nos. 14, 16 and 17 are derricks. The Deep Sand Oil Co.'s No. 1 Rush, is drilling at 3,100 feet. The Hines Oil Co.'s No 2 Parker is drilling at 3,780 feet; No. 1 Gordon is standing at 5,000 feet and No. 2 is a derrick. Sun Oil Co.'s No. 2 McLean is drilling at 4,840 feet; No. 3 and 4 are standing; No. 11 is a derrick; No. 9 is drilling at 5,075 feet; No. 10 at 2,300 feet; No. 1 Price, drilling at 5,000 feet; No. 2 at 4,725 feet. Rio Bravo Oil Co.'s No. 50 T. and N. O. at 4,100 feet and No. 101 at 3,600 feet. Plummer Oil Co.'s No 1 Quinn is a derrick. Walker Oil Co.'s No. 1 Quinn is drilling at 4,980 feet. Magnolia Petroleum Co.'s No. 3 fee is drilling at 4,200 feet; No. 4 at 4,900 feet; No. 5 at 500 feet. Kinnear Oil Co.'s No. 1 Gladys is a derrick. J. O. Davis' No. 1 Gladys, drilling at 5,140 feet. The Texas Company's No. 1 Garrick is at 1,700 feet. The Spindletop Western Oil Co's No. 1 Deutser and No. 2 Weed are derricks. Grayburg Oil Co.'s No. 1 McLean will deepen. Gulf Production Co.'s No. 10 Oakwood is drilling at 4,650 feet; No. 7 Daisy Roche and others at 4,775 feet.

Salt Water Wells

In the South Liberty-South Dayton district, The Texas Company got saltwater in No. 4 Simms on the east, or Liberty side of the Trinity River, at 3,575 feet and the Navarro Oil Co. shared the same fate with its No. 10 Harrison at 3,450 feet. On the west, or Dayton side of the river, the Gulf Production Co. has a pumper at 3,700 feet in No. 1 Palmer. The Humble Oil & Refining Co.'s No. 7 Welder bailed salt water at 3,775 feet.

The Paraffine Oil Co.'s No. 34 Heywood in the Batson Pool is pumping 15 bbls. at 1,075 feet. The Gulf Production Co.'s No. 65 Choate is good for 10 bbls. at 1,150 feet. The East Batson Oil Co.'s No. 8 Counzelman bailed salt water at 1,230 feet. S. R. Buchanan's No. 93 Milhome is bailing at 1,000 feet.

The Sun Oil Co.'s No. 174 W. T. C. in the old Saratoga Pool is bailing at 860 feet.

The Sun Oil Co.'s No. 1 Carpenter on the southwest side of the Sour Lake Pool is making 185 bbls. at 4,500 feet. Gulf Production Co.'s No. 2 Thompson is pumping 75 bbls. at 3,000 feet. Humphreys Corp. abandoned No. 1 Gordon at 3,800 feet.

In the Orange Pool, the Gulf Co.'s No. 3 Granger is heading 385 bbls., 18 per cent water, at 4,400 feet. The Humble Oil & Refining Co.'s No. 6 Winifree, a work over, is making 120 bbls. at 4,000 feet.

In the Lockport, (La.) Pool, the Vacuum-Gulf's joint No. 4 Farquhar is flowing 1,000 bbls., 90 per cent oil, at 4,400 feet. Joint No. 1 Farquhar is bailing at 4,400 feet. Joint No. 2 Friedberg & Wolf will make a pumper at 4,375 feet.

The Gulf Refining Co. abandoned No. 32 Vincent in the Vinton (La.) Pool at 2,500 feet after working it over and failing to make a well. The Vinton Petroleum Co.'s No. 59 Gray was finished up at 2,450 feet as a 50-bbl. producer.

In the Edgerly (La.) Pool the Rex Oil Co.'s No. 5 Hunter is good for 100 bbls at 4,000 feet.

It will be noted in the above list that a large number of the wells completed are below 3,800-4,000 feet and that many of these are pumpers and light pumpers at that. It means that these wells will be a long time in paying out, if indeed they ever produce enough oil to pay for themselves. Deep pumping wells in the Gulf Coast region are a liability rather than an asset. While this statement applies to all producing regions, it is specially true in the Coastal Plains Pools, where wells have to be constantly worked over, new strainers and tubing set, due to the corrosion and then there is always the menace that they will turn into saltwater wells. Only the major companies can afford to operate for small wells.

Drilling in Pools

In the Boling Pool, The Texas Company's No. 2 Farmer is at 3,700 feet and No. 3 Felder on the northeast flank is around 4,600 feet. Sun Oil Co.'s No. 2 Felder is idle. The Gulf Co. has started No. 4 Chase on the south side. Weed

(Continued on Page 130)

WILDCAT DRILLING OPERATIONS IN LOUISIANA-ARKANSAS AREA

By Neil Williams

LOUISIANA

Bienville Parish

S. P. Borden's No. 1 L. & A., Section 9-15-7, is being drilled in gumbo at 1,200 feet. Kimbrough and associates' No. 1 Cargle, Section 27-15-8, still is shut down at 1,550 feet.

Bossier Parish

Triangle Drilling Co. and W. D. Perritt's No. 1 Levy, Section 13-20-14, found salt water at 2,540 feet and has been abandoned. Clark and Norton's No. 1 Ford, Section 32-23-13, is drilling at 2,882 feet. Doern and associates' No. 1 Thomas, Section 10-22-11, tested dry at 2,785 feet and now is waiting orders. John Glassell, Jr., and associates' No. 1 Gibson-Tiger, Section 14-21-14, has been shut down for fuel with the hole at 900 feet. Magnolia Petroleum Co. is reaming down No. 1 Dodson, Section 15-23-12, to the bottom of the hole at 2,688 feet. Palmer Corp. has started drilling at No. 4 Bossier, Section 9-16-11, and is at 900 feet. Twelve-inch casing is cemented at 321 feet. W. R. Ramsey is drilling at 1,050 feet in No. 1 Robertson, Section 22-23-12. This is in the Carterville area. Simms Oil Co.'s No. 2 Sandidge, Section 5-18-11, is in shale at 1,814 feet. Tubbs and associates' No. 1 Jacobs, Section 26-20-13, is drilling rock at 2,235 feet.

Claiborne Parish

The only two drilling tests in Claiborne Parish are the Magnolia Petroleum Co.'s No. 1 Lee, Section 16-22-8, and Mitchell & Jansen's No. 1 Wilburn, Section 23-19-7. The former is reaming at 3,183 feet while at the latter a heavy rig is being set up.

DeSoto Parish

Helm & Jarman's No. 1 Joyner, Section 28-11-12, has been shut down at 3,018 feet. A core was taken at this depth which showed some oil. Magnolia Petroleum Co.'s No. 1 Logan, Section 17-10-12, after drilling to 232 feet is shut down waiting for 13⅜-inch casing. William Sebastian Syndicate's No. 1 Sebastian, Section 11-10-13, is in gumbo at 1,932 feet. The Texas Company's No. 12-A Wemple, Section 2-12-12, also is in gumbo at 2,120 feet.

Franklin Parish

Barbour Oil Co.'s No. 1 Baker, Section 3-15-7e, is drilling in shale at 1,950 feet. This formerly was operated by Robinson & Long.

Grant Parish

Philp and associates have rig up for a test at No. 1 Holmes, Section 17-9-1e. Section 18. L. C. Swope cemented 6⅝-inch casing at 1,500 feet in No. 1 fee. Rue and associates have shut down No. 1 Bliss & Williams, Section 10-7-4w.

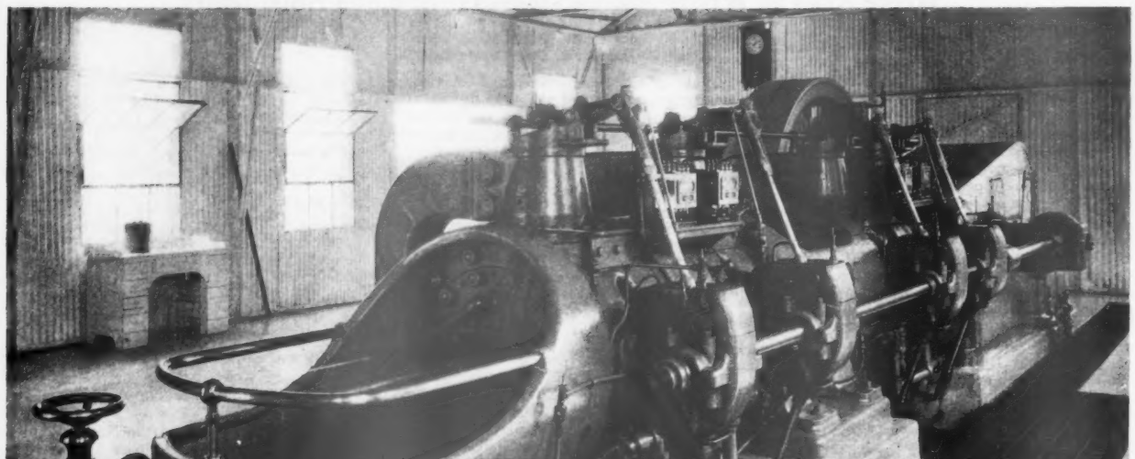
LaSalle Parish

Tunica Petroleum Co. is core drilling at 2,380 feet in Section 23, L. & A., Section 9-7-2e. The same company has shut down No. 25 L. & A., Section 6-8-3e.

Natchitoches Parish

Gulf Refining Co. is drilling gummy

(Continued on Page 89)



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Pleasant Hill, La., Opens New Field

Two Producers Completed in Sabine Parish District Chief Development of Week's Operations

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 18.—Developments of the past week apparently have added another new oil field to the list in the north Louisiana-Arkansas district. This is the Pleasant Hill district of northern Sabine Parish, Louisiana, which the Arkansas Fuel Oil Corp. featured by bringing in two good wildcat producers.

These two wells, No. 3 Logan and No. 4 Logan, Section 35-10-12, make the second and third producers, respectively, in the Pleasant Hill vicinity and are considered a good indication that a field of importance exists in that locality. No. 3 Logan flowed 300 bbls. in the last 24 hours while No. 4 flowed 55 bbls. in the seven hours it was left open. The 2½-inch tubing will be set with a packer in the latter well.

The bringing in of these two wells climaxed a period of three weeks of watchful waiting on the part of oil operators during which the Pleasant Hill Field has been hanging in the balance with these wells cemented on top of the sand. The Arkansas started drilling the plugs which were cemented at 3,105 feet in No. 3 and 3,155 feet in No. 4 the middle of the week.

No. 3 blew itself in while the liner was being set for bailing, making at first at the rate of 450 bbls. of clean oil daily. It has 14 feet of sand at a total depth of 3,213 feet.

No. 4 was bailed in at the same time and made only two small heads of oil, or about 16 bbls., and since then has been deepened to 3,265 feet, where it is in 32 feet of sand and made the 55 bbls. of oil in seven hours.

Another Interesting Well

The Arkansas also has another interesting well in the sand, No. 5, Section 28-10-12, in which the plug was drilled out at the same time at 3,108 feet. It swabbed some oil after the liner was bailed practically dry. The liner, however, was pulled, and the hole drilled to a total depth of 3,224 feet. The liner again has been set and the test is ready to be swabbed again.

The action of No. 3 Logan has not been entirely favorable like Arkansas No. 1, the discovery well. Production has fallen off sharply from 450 bbls. daily initial to 300 bbls. daily flow at present. This is even a more rapid decline than in No. 1 well, which now is flowing approximately 100 bbls. daily.

May Extend Southwest

While the wells have determined that there is a commercially productive field at Pleasant Hill it is generally believed that the district may be spotted. It now seems certain that whatever field is developed will extend to the southwest. This places Moffett and associates' No. 1 Moore, Section 5-9-12, in a key position. This well is within a mile directly southwest and is drilling in a lime around 2,748 feet. For this reason the Moffett test will be watched closely.

The district already has been defined fairly well in other directions. Only last week the Ohio Oil Co.'s No. 1 Cook to the east, in Section 34-10-12, was dry at 3,414 feet. At that depth it had failed to pick up sands found in the neighboring Arkansas Fuel Oil Corp. wells. Several other tests, as indicated in an accompanying map, are drilling in various directions. The Magnolia Petroleum Co. is rigging up for No. 1 Hall in the same section.

Carterville Pool

The new wildcat Carterville Pool in northern Bossier Parish which also has been in the limelight for some time experienced some unfavorable developments this week when the Louisiana Oil & Refining Co.'s No. 1 Blanton, Section 23-23-12, was opened for seven hours Saturday and flowed 210 bbls. of fluid, of which only 10 bbls. were oil.

This test was bailed in over a week ago and made an estimated 1,000 bbls. of fluid of which only about half was salt water. At that time, however, it was allowed to flow only for two 15-minute periods and then was shut in pending the erection of storage. Operators have looked on this well as determining the real possibilities of the Carterville area although a previous well, Woodley & Collins' No. 2 L. & A., has been flowing some oil since it was bailed in several weeks ago. The Louisiana well is estimated to be making also about 20,000,000 feet of gas. With the exception of these two wells other Carterville producers are making gas only.

Pine Island Well Comes Back

Of note during the week was the Gulf Refining Co.'s Trinity horizon well, No. 12 Tyson, Section 14-21-15, Pine Island Field, which again started producing oil after production had stopped entirely with the blowing in of The Texas Company's 40,000,000-foot gasser, No. 5 Herndon, in the same section several weeks ago. The Texas Company's well was out of control for a week. With the placing of the latter well under control the Gulf well has started flowing again.

Floods Cut Operations

Operations in the majority of Arkansas and Louisiana fields were considerably curtailed during the week because of heavy rains and flooded conditions of the roads and fields. This was reflected in production figures which showed a drop in average daily output of 6,790 bbls. Production by fields was:

Caddo Light	
Caddo light	9,800
Caddo heavy	5,680
Homer	5,225
Haynesville	7,850
DeSoto and Red River	4,280
Elm Grove	670
Bellevue	1,620
Cotton Valley	6,050
Urania	11,165
Total	52,340
Arkansas	
El Dorado	6,150
Lisbon	4,450
Smackover light	11,200
Smackover heavy	90,760
Stephens	1,410
Nevada	1,410
Bradley	150
Total	115,530
Total both states	167,870
Total last week	174,660
Loss	6,790

Bossier Parish

A new gas well in the Elm Grove district marked Bossier Parish proven field developments. This was the Gulf Refining Co.'s No. 6 Hodges, Section 24-16-12, which gauged 759,000 feet of dry gas from sand at 1,900 feet. Rock pressure of this gas is 520 pounds. In the same section, The Texas Company's No. 14 Caplis is to be standardized at 1,551 feet, at which depth it is waiting on rig.

In the Bellevue Pool, Humble Oil & Refining Co.'s No. 30 Bliss and Wetherbee, Section 15-19-11, is being cored at 1,165 feet.

Caddo Parish

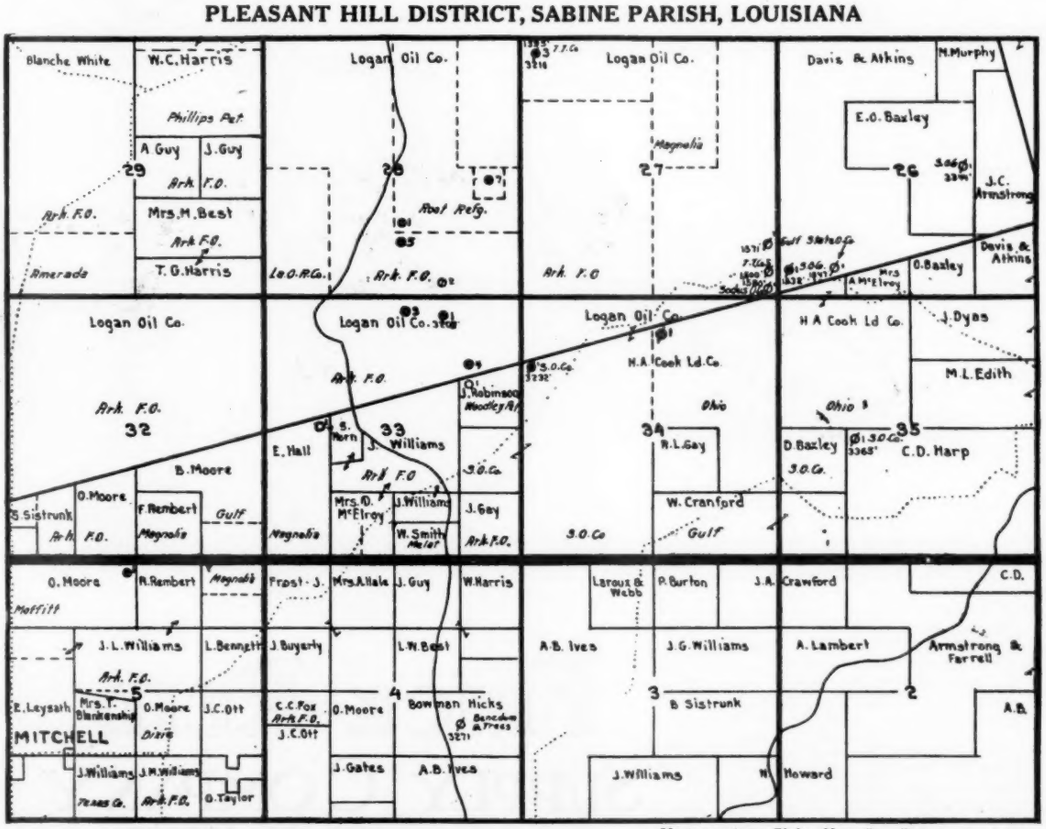
Gulf Refining Co. got a good well in its No. 178 Stiles, Section 33-21-16, which is pumping 125 bbls. of oil daily from sand at 1,838 feet. In the same section, Standard Oil Co. is drilling at 1,364 feet in No. 180 Stiles, and is preparing to standardize No. 181 Stiles, which is shut down at 1,840 feet waiting on a rig. The Standard Oil Co. also has a derrick up for No. 183 Stiles.

Several miles to the north in Section 15, Galloway and associates have abandoned No. 1 Smith because of a salt water test at 2,330 feet. It, however, had a showing of oil and gas. W. W. Dobson's No. 4 Rives, Section 5-20-16, was dry at 1,877 feet, as was Big Lake Oil Co.'s No. 1 Rodessa, Section 23-23-16, at 3,003 feet. In Section 8-19-16, Haynes Brothers have abandoned No. 1 Louisiana Livestock & Planters Co. at 3,712 feet. A. C. Glassell got a 7,000,000-foot gas well at 893 feet in No. 1 Thigpen and Herold, Section 26-18-12.

In the Waskom Pool, Bahan & Bahan have a fishing job in No. 2 Wilburn. This test lost the bailer at 946 feet. The Standard Oil Co.'s No. 1 Trosper is drilling in rock at 2,719 feet in Section 34-18-16. In this test, the 6-inch casing was cemented at 2,714 feet, and the

(Continued on Page 89)

PLEASANT HILL DISTRICT, SABINE PARISH, LOUISIANA



—Map courtesy Globe Map Co., Shreveport, La.

Developments the past week have indicated the opening of another important wildcat field in Louisiana, principally in Township 10 north and Range 12 west.

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IT IS a matter of great pride with the Whitlock Cordage Company that their workmen are so skilled in the selection of fine Manila Fibre, and in the various steps of manufacture, including lubrication, that Whitlock Cordage serves always as a unit, instead of wearing on the outside or developing weak points.

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The price per pound sometimes seems high, but we have discovered, and our customers have discovered, that the cost per foot is low by reason of the fact that it is light in weight. Cheap cordage is often loaded, by which we mean that it is too heavily lubricated, or impregnated with foreign substances.

We would like for you to become familiar with the iron strength and long wearing qualities of Whitlock Cordage. You will find it at the Frick-Reid Store in your field.

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Carbic Manufacturing Co.
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Oil Country Boilers and Tanks.

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Settled Areas Affected By Low Prices

Little Curtailment of Operations as Yet in Flush Fields of California. Conditions at Seal Beach Becoming Critical

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 16—The recent cut in California crude has not yet resulted in any cessation of drilling at Seal Beach nor has it reacted unfavorably as far as future wildcatting is concerned. Small producers with consequent large overhead have been hit rather hard and while 25 small pumping wells were closed in during the past week, this is the only reaction noted to date. Existing low prices for crude will undoubtedly retard drilling in the older fields, especially where the initial output of new wells is very small. It is needless to say that practically all of the major companies will cut down drilling wherever possible especially those concerns which expect to build up or purchase any considerable amount of oil in the town lot area at Seal Beach. One must not get the impression, however, that present drilling operations will be suspended and all future work held up indefinitely for such will not be the case. No cessation in development work is anticipated at Richfield, Brea Olinda or Seal Beach due to the multiplicity of operators drilling in those areas. Some restrictive measures will probably be taken by many individual operators throughout the state but no general curtailment is anticipated due to the usual difficulties experienced.

Deliveries of fuel oil to the navy under contracts recently awarded to General Petroleum Corp. and Richfield Oil Co. have already begun. The naval tanker Sapelo, in from Haiti, has just lifted her first cargo under the new contract. She loaded at California Petroleum Corp.'s dock, taking 78,000 bbls. for New York as part of the Richfield contract. The navy tanker Brazos arrived from Haiti last night and will start loading approximately 56,000 bbls. at Richfield's Long Beach plant preparatory to sailing east immediately. The General Petroleum Corp. contracted to deliver 800,000 bbls at 75 cents a barrel and Richfield 450,000 bbls. at 71 cents a barrel. Delivery is to be to the navy tankers at the companies' docks. The present price compares with 84½ cents a barrel which the government paid Pan American Petroleum Co. under the contract which recently expired and with $1 a barrel obtained by other companies a year ago.

Transferring Fuel Oil

Four United States Navy tankers, the Cuyama, Kanawha, Ramapo and Neches, will begin a 15 months' task in June transporting from Los Angeles Harbor to the Navy's petroleum reserve base at Pearl Harbor, Hawaii, a total of 2,700,000 bbls. of California fuel oil, under plans announced recently by the Navy Department. The project, when completed, will be the largest concentration of naval fuel oil supply in history. Rear Admiral Harry H. Rousseau, chief of the Bureau of Yards and Docks, is expected in Los Angeles soon to confer with officials of the Standard Oil Co. of California, the Pan American Petroleum Co. and the Union Oil Co. of California relative to a plan whereby the Navy Department will trade crude petroleum to the above firms for fuel oil, delivered to Navy tankers at Los Angeles Harbor terminals. The crude involved will be produced on the California naval oil reserves. The tank farm at Pearl Harbor was constructed by the Pan American and was to have been filled by that company under contracts by which Doheny secured production rights to the Elk Hills naval oil reserves. The contracts were recently declared illegal, however, by the United States Supreme Court, the oil reserve lands being returned to the Navy Department, together with the Pearl Harbor tanks constructed by Doheny. A total of 4,200,000 bbls. of oil will be stored at Pearl Harbor, 1,500,000 bbls. having already been transported there by tankers of the Pan American fleet prior to the court decision.

Seal Beach

With some 10 or 15 new wells scheduled for completion in the Seal Beach Field within the next two weeks daily production in this district is as a result expected to approach the 50,000-bbl. mark. The output during the past several weeks has been hovering around 30,000 bbls. daily due to infrequent completions but the intensive drilling campaign in the town lot section which was initiated shortly after completion of the Pan American's No. 1 Naples is beginning to bear fruit and from now on the number of new wells finished each week should grow larger until the development peak has been passed. The major refiners are still rather reluctant to obligate themselves by agreeing to purchase this anticipated production in the town lot area and unless this policy is changed the peak production at Seal Beach may not be as high as some expect. Practically all of the major pipe line companies have either laid or are contemplating the extension of their facilities into this district but with one or two exceptions this is being done to handle own production. The refusal of the larger companies to contract for this Seal Beach crude has resulted in a rather peculiar situation in that independent refiners are offering prospective producers 25 cents per barrel under the existing price, which approximates 90 cents per barrel for 25-gravity oil. This is the first time in years that it has been possible for independent refiners to purchase crude oil in the open market under the posted price of the larger pipe line companies. In fact, for the past two or three years many independents have been paying bonuses for crude, notwithstanding the heavy overproduction which has existed during this period.

Nearing Critical Stage

Conditions at Seal Beach are rapidly nearing the critical stage due to the inability of operators to negotiate satisfactory contracts with the major pipe line companies and this unsettled condition will undoubtedly continue until the larger refiners definitely announce their future policies with respect to this anticipated production. Preliminary announcements of major companies to the effect that they would only purchase additional crude with limitations has had a tendency to slow up drilling operations a little bit, although it is hardly noticeable. If this crude is allowed to remain available to jobbers and small independent refiners it is a foregone conclusion that the gasoline market will suffer accordingly due to the usual unscrupulous methods of bootleggers and fair-weather operators. For this reason it appears quite probable that the larger companies will eventually tie up this oil under certain conditions and protective limitations and stipulations. This policy would be much more satisfactory to both producer and refiner in that it would afford the former an outlet for production and stabilize market conditions to the advantage of the latter. Certain developments during the past 10 days have tended to indicate this policy might be adopted at the opportune time. It remains to be seen, however, whether the larger refiners will cut this Seal Beach crude again to offset the cost of erecting additional steel storage and pay the producer outright or whether existing prices will be maintained and the producer reimbursed for a portion of his production and the balance put in storage until conditions improve. From the standpoint of the refiner it would simplify matters to cut Seal Beach crude and for this reason it is quite possible that present quotations on this specific oil may be further reduced within the next 60 days.

Marland Completions

The Marland carried off completion honors in the Seal Beach Field during the current week by bringing in a new well, No. 15 Bixby, and recompleting two others which had been previously killed

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well and Location—	S-T-R	Depth	Status
Smith Pet. Co., No. 1 Johnson, Hawthorne	17- 3-14	6,215	testing
General Pet., No. 1 Smith, Potrero	35- 2-14	4,502	suspended
General Pet., No. 1 Guiberson, Potrero	35- 2-14	Rig	wait. devel.
Calif. Eastern, No. 1 Smith, Potrero	35- 2-14	5,282	suspended
Calif. Eastern, No. 1 Santa Monica, Potrero	27- 2-14	790	sd. drilling
Associated, No. 1 Cypress, Potrero	34- 2-14	4,450	cmtd. oi lsand
Getty, George F., No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
Getty, Paul, No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
California Pet., No. 1 Sutton, Potrero	34- 2-14	Rig	wait. devel.
California Pet., No. 1 Toms, Potrero	35- 2-14	Rig	wait. devel.
California Pet., No. 1 Armour, Potrero	35- 2-14	Rig	wait. devel.
Cole, Fred E., No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
Dill Oil Co., No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
Walker, Fred, No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
Potrero Oil Co., No. 1 Cypress, Potrero	35- 2-14	Rig	wait. devel.
Dominguez Exten., No. 1 Compton, Dominguez	22- 3-13	5,530	set 6¼-inch
Getty, George F., No. 1 Anderson, Rivera	.....	.....	location
Circle Oil Co., No. 1 Pomeroy, Manchester	22- 3-14	3,358	cleaning out
Standard, No. 1 University, San Fernando	15- 2-15	5,870	hd. sd. drilling
Shell, No. 1 Mission, San Fernando	.....	.....	location
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	4,902	sd. sh. drilling
Petroleum Sec., No. 1 Weston, El Segundo	27- 4-14	1,901	hd. sd. drilling
Calif. Pet. Dev., No. 1 Spitz, Capistrano	2- 8- 8	4,000	suspended
E. J. Robinson, No. 1 Carr, San Juan Capistrano	13- 8- 8	2,414	suspended
Cardiff Oil Co., No. 1 Oceanside, San Diego	24-13- 4	2,516	cement 8¼
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11- 5	3,210	suspended
Petroleum Sec., No. 1 DeBaker, Bandini	18- 2-12	5,721	hd. sd. drilling
General Pet., No. 1 Lomita, Sunset Beach	19- 5-11	4,910	hd. sd. drilling
Johnson, Geo. W., No. 1 Wickham, Los Angeles Co.	32- 5-17	2,839	suspended
Reliance Home Inv. Co., No. 1 Leuzinger, Los Ang.	8- 3-14	Rig	rigging up
Shell, No. 1 Allec, Placentia	.....	.....	location

IMPORTANT NORTHERN CALIFORNIA WILDCATS

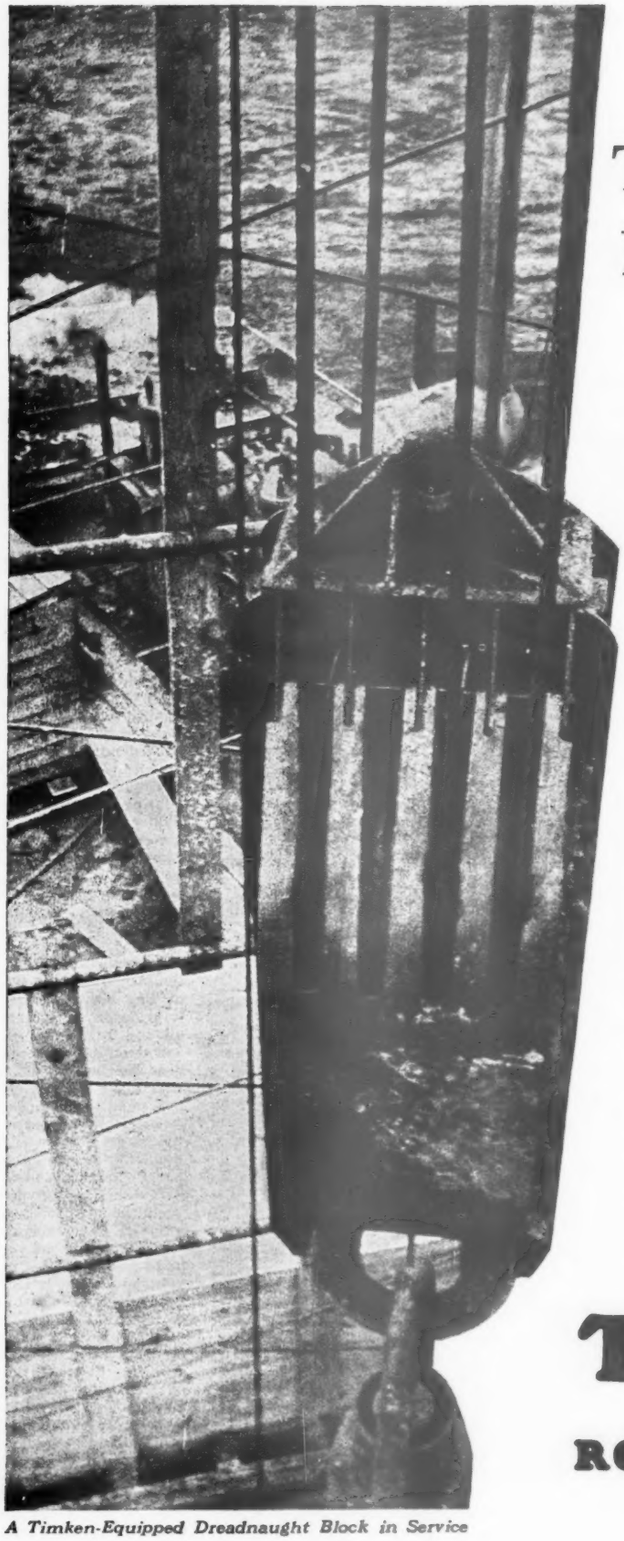
Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1 Kettleman Hills	30-23-19	2,365	suspended
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,165	fishing
General Pet., No. 1 Dome, Kettleman Hills	26-22-18	Rig	rigging up
C. C. M. O., No. 1 McGlashan, Kettleman Hills	17-24-19	1,810	sd. sh. drilling
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	2,192	bl. sh. drilling
Ahlburg Gas Co., Well No. 1, Kettleman Hills	7-23-23	Rig	rigging up
Milham Explin., No. 1 Kettleman, Kings Co.	2-22-17	1,301	hd. sd. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	2,701	hd. sd. drilling
California Pet., No. 1 Camarillo, Ventura Co.	21- 2-20	2,260	fishing
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	5,997	br. sh. drilling
C. C. M. O., No. 1-B Hobson, Ventura Co.	16- 3-24	3,640	br. sh. drilling
Milham Explin., No. 1 Sexton, Ventura Co.	19- 3-22	7,100	fishing
Standard, No. 1 Camarillo, Ventura Co.	29- 2-20	4,950	reaming
Standard, No. 1 Montalvo, Ventura Co.	17- 2-22	5,068	gr. sd. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	4- 4-18	1,470	hd. sd. drilling
Miley Explin., No. 2-A Casitas, Ventura Co.	7- 3-25	550	suspended
Rio Grande, No. 1 Canet, Ventura Co.	9- 3-23	4,962	oil and gas
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	2,417	sd. sh. drilling
Star Petroleum, No. 1 Canet, Ventura Co.	13- 3-23	3,210	fishing
Richfield, No. 1 Janes, Ventura Co.	16- 5-18	1,650	suspended
Richfield, No. 27 Piru, Ventura Co.	35- 5-18	1,480	suspended
Superior, No. 1 Pena, Ventura Co.	18- 4-17	3,365	sd. sh. drilling
Milham Explin., No. 2 Buttonwillow, Kern Co.	8-28-23	4,205	set 8⅝
Milham Explin., No. 3 Buttonwillow, Kern Co.	7-29-24	Rig	rigging up
Pacific Eastern, No. 1 Bakersfield, Kern Co.	6-30-28	4,188	hd. sd. drilling
C. C. M. O., No. 1 Quinn, Delano	23-25-27	1,095	bl. sh. drilling
Union, No. 1 Gill, Famosa	8-28-27	3,281	suspended
Standard, No. 1 Bacon, Kern Co.	27-28-20	Mtl.	building rig
Marland, No. 1 Jacalitos, Fresno Co.	22-21-15	3,890	hd. sd. drilling
Petroleum Sec., No. 1 Aniotz, Monterey Co.	2-22- 9	1,980	hd. sd. drilling
Petroleum Sec., No. 1 Sandy, Monterey Co.	18-27-13	.....	location
Birch Oil Co., No. 1 Porterville, Tulare Co.	13-23-26	Mtl.	building rig
Ozena, No. 1 Allenworth, Tulare Co.	26-24-24	2,300	bl. sh. drilling
Grafford, C. W., Well No. 1, Tulare Co.	26-24-24	2,525	fishing
Walkiln Pet., No. 1 Emerick, San Luis Obispo Co.	35-27-10	2,470	redrilling
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	172	sd. drilling
Shell, No. 1 Cowell, San Mateo Co.	16- 5- 5	2,821	hd. sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	4,840	hd. sd. drilling
Talbot Oil Co., Well No. 1, Alameda Co.	15- 3- 3	602	sd. sh. drilling

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year To date	Same time Last year
Crude oil	250,391	35,770	79,335	11,334	1,990,085	3,887,258
Fuel oil	473,224	67,603	225,770	32,253	2,687,343	1,912,865
Diesel and gas oil	.....	.....	.....	.....	1,019,661	629,078
Gasoline	76,211	10,887	148,025	21,146	1,881,979	1,655,456
Tops	.....	.....	.....	.....	.....	149,906
Coastwise—						
Crude oil	555,607	79,372	360,843	51,549	7,268,197	6,723,611
Fuel oil	220,589	31,513	128,287	18,327	3,482,069	2,533,328
Diesel and gas oil	6,505	915	.....	.....	59,475	98,275
Gasoline	119,904	17,129	175,686	25,098	2,122,799	2,002,506
Kerosene	.....	.....	.....	.....	40,605	59,442
Tops	.....	.....	.....	.....	.....	139,215
Exports—						
Crude oil	106,509	15,216	.....	.....	833,516	641,498
Fuel oil	422,429	60,347	452,745	64,678	6,951,697	4,317,704
Diesel and gas oil	.....	.....	50,287	7,184	226,225	103,899
Gasoline	45,029	6,433	.....	.....	448,851	1,037,777
Tops	.....	.....	72,371	10,339	72,371	.....
Kerosene	51,097	7,299	.....	.....	624,440	673,192

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	251,458	413,059
Gasoline	151,269	21,610	74,061	10,580	811,430	358,360
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	.....	.....	53,860	7,694	111,970	104,088
Coastwise—						
Fuel oil	121,758	17,394	257,920	36,846	1,690,447	1,454,851
Diesel and gas oil	.....	.....	.....	.....	134,308	.....
Gasoline	97,930	13,990	172,683	24,669	1,304,950	1,143,893
Kerosene	.....	.....	.....	.....	30,674	118,576
Exports—						
Fuel oil	127,460	18,209	73,916	10,559	497,227	605,183
Gasoline	64,148	9,164	90,437	12,920	1,087,635	668,490
Kerosene	.....	.....	107,712	15,387	356,914	437,743
Lubricants	.....	.....	.....	.....	9,120	9,093



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Tapered
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due to water trouble. The company's new well completed in the Bixby zone at 4,435 feet and finished with an 8¼-inch oil string, is flowing through a ½-inch bean under a pressure of 150 pounds on the tubing and 850 pounds on the casing. The initial 24-hour tank gauge showed it to be making 730 bbls. of exceptionally clean 23.2 gravity oil. The Marland's recompletions were No. 2 Bixby, finished at 4,427 feet, and No. 5 Bixby, brought in from 4,332 feet. Both are Bixby zone producers and the recement job in each case was apparently satisfactory. No. 2, flowing through a ¾-inch bean under a pressure of 750 pounds, as making 1,780 bbls. of fairly clean 22.8 gravity oil daily. No. 5 was a somewhat smaller well and the daily output, 1,100 bbls., was also showing a much higher cut. The production from this well, which is flowing through a ½-inch bean under a pressure of 550 pounds may, however, clean up a little later. The Marland has just spudded in another new well on the Bixby lease and started three more down to the pay on the Selover lease within the past four or five days. This company is now running 15 strings of tools in this field and will probably spud in several more holes in the near future.

The Pan American has just finished No. 5 Naples, its third successful producer in the Seal Beach town lot area, and will probably have two more wells on production tomorrow as both Nos. 2 and 4 on the Naples lease are scheduled to be turned loose late this evening. In addition to the three wells just listed, the Pan American and Petroleum Securities have 18 other drilling projects in this section, the depths of these various holes ranging all the way from spud to 4,000 feet. The Pan American's latest completion, No. 5 Naples, was brought in flowing 2,200 bbls. of clean 26.8 gravity oil and 2,500,000 feet of well-saturated gas from 4,758 feet.

Another Good Well

Paul Getty, whose No. 1 Cleaver is doing 3,500 bbls. of clean 26.9 gravity oil and 2,000,000 feet of exceptionally wet gas daily, has made a preliminary test of his second well in the town lot area and it looks good for about 2,500 bbls. daily. Due to Getty's inability to make pipe line connections with any of the larger companies in view of their consistent refusal to purchase any Seal Beach crude it is doubtful if any accurate figures will ever be available on the initial output. Difficulty in disposing of this oil and the absence of any considerable amount of tankage makes it obligatory to either shut in this new producer or bean it down severely. Paul Getty has two other wells which should be finished in about a week or ten days but what is the use of completing a 2,000-bbl. well if the oil can't even be given away.

The Associated will probably finish several wells in the Seal Beach Field during the next two or three weeks, one of which, No. 4 Bryant, in the extreme southeastern part, will be watched with considerable interest. This well is at the present time standing cemented at 4,560 feet and it is destined to be the Associated's first test of the lower or Selover zone at this point. As was expected, the top of this zone was encountered about 200 feet higher stratigraphically than the top of the Selover sand in the town lot area and it begins to look as though the Associated's Bryant lease will be quite productive. This property was acquired subsequent to the completion of the Marland's discovery and but a short time after the Shell quitclaimed it due to the then unfavorable outlook. By a strange twist of fate the Marland drilled its discovery well on property previously tested and abandoned by the Shell on the assumption that the field was located to the west instead of east as was found later. After the Marland secured production the Shell abandoned its Bryant property as it appeared to be located too far northeast. The Associated grabbed it immediately, gambling on the possibility of getting production in the southern part and succeeded. In addition to No. 4 Bryant, which was drilled entirely through the upper or Bixby zone in order to pick up the Selover horizon, the Associated is expected to recomplete Nos. 2 and 3 Bryant, which failed to stand up and were consequently killed and deepened. On the Hellman property to the east the Associated is being temporarily delayed with a fishing job in No. 3 but will have No. 10 on production within the next few days.

Standard Curtailing

The Standard has reduced its drilling operations in the Seal Beach Field to an absolute minimum. In fact the company is only running three strings of tools at the present time. The Standard's present policy of restricting drilling operations is a commendable one, particularly in view of the fact that it does not leave the company open to criticism due to its refusal to handle the anticipated flood of crude. The California Eatern Oil Co., while it has been rather slow in getting under way, is making fairly good footage in the four drilling projects which are under way at the present time. The California Petroleum Corp., on the other hand, always quick to take advantage of every favorable opportunity, put full speed ahead as soon as this area was opened up and as a result this concern is running 11 strings of tools at the present time. The depths of these various holes range between 2,000 and 4,500 feet and it appears quite probable that this company will finish two or three new wells within the next 10 days. The General Petroleum, with nine drilling projects on the Wason property, stands an excellent chance of finishing three or four producers within the next 21 days.

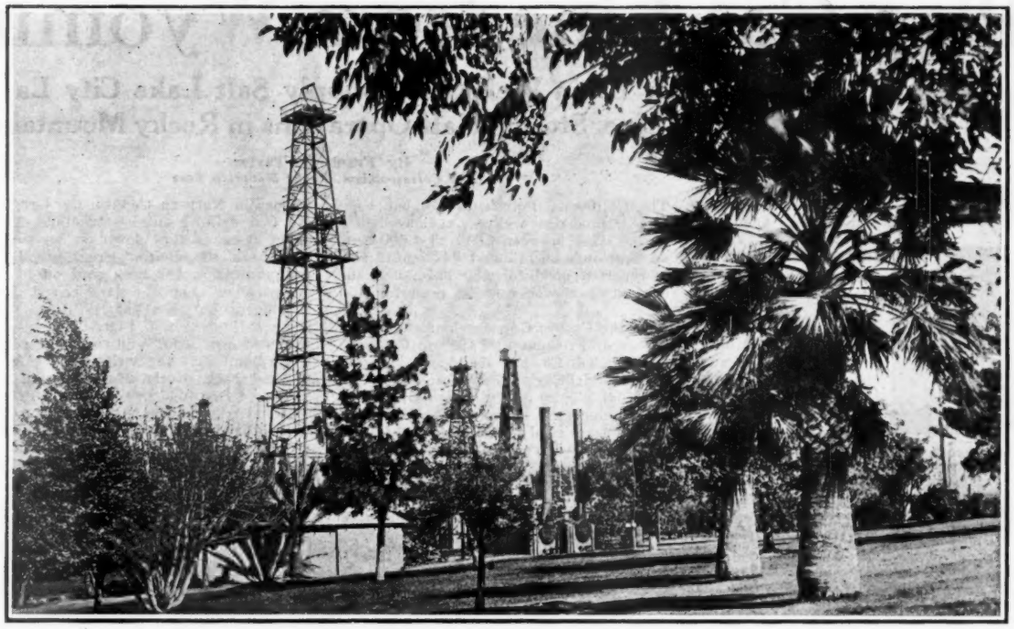
George F. Getty, who has experienced considerable success in practically all of the recent fields opened up during the past few years, has several drilling wells already under way in the town lot area and, since rigs are going up for three more, it is apparently his intention of drilling all 10 immediately in the hope that conditions will improve within three months. The Superior Oil Co. is making exceptionally fast footage in all of its five drilling wells and, while they will probably not come into production within the next two weeks, all should be finished within 30 days. The Universal Consolidated's initial completion in the town lot area should, barring the development of mechanical trouble, be No. 1 Wolfe, which has only 500 or 600 feet to go.

Huntington Beach

Completions in the town lot section of the Huntington Beach Field have become quite infrequent of late due to the fact that most of the favorable productive area has been fairly well drilled up. The wild scramble for production at Seal Beach and the probability of finishing smaller wells in the town lot section at Huntington Beach will minimize against any increase of development work in the latter area, even if the productive limits should be extended. The money tied up at Naples due to inability to dispose of production will temporarily hold off further work as wells cannot be drilled on records alone. It takes real coin of the realm. Both the development and production peak at Huntington Beach were passed around the first of the year and the relatively small amount of drilling now under way in that field will naturally be reflected in a smaller number of completions in the future. Daily production has become stabilized around 75,000 bbls. and, while the output will fall off from time to time, the completion of present drilling projects will probably prevent any large drop for several months. The only undrilled property in the town lot area at the present time which can be expected to result in substantial production is the Standard's Pacific Electric lease paralleling the ocean front and on which that company is run-

(Continued on Page 129)

CALIFORNIA IS A DRILLER'S PARADISE—IN SPOTS



Looking through the palms, orange trees and derricks on one of the leases of the Union Oil Co. at Richfield, California.

LULL IN SAN JUAN BASIN WORK; WILDCATTERS CONTINUE ACTIVE

By Special Correspondent

FARMINGTON, N. Mex., Apr. 15.—There is a little lull in the activities of the producing companies in the San Juan Basin Field, due to the low price of crude and the reductions in the price of gasoline, but the operations of the wildcatters is going forward with as much vigor as ever. The general feeling seems to be that the low prices will not last more than a few months, and if some new structures are proven in the meantime they will be in position to benefit with the return of better price and producing conditions.

The Miley Oil Co., operating on the Red Mesa structure, Section 32-33-12, cemented the hole to about 40 feet above the lost tools, and will start drilling to sidetrack the tools at the bottom.

The Union Oil & Mining Co. of Indiana, having completed the erection of a new steel rig, began fishing for the lost tools in its Blanco well, Section 8-29-9, and with the new equipment it is believed the hole will be cleared in the next two or three weeks.

The Mid-Continent Oil Co.'s No. 1 in the Bloomfield district, Section 22-29-11, has reached a depth of nearly 900 feet and has encountered five producing sands. It is the intention to put small shots in four of these sands; and when this is completed, the company expects a production of 25 bbls. per day of high-grade crude. This is the well previously reported as being a 10-bbl. producer.

The Senate Oil Co., operating in the Kutz Canon district, Section 34-29-11, is awaiting the arrival of a packer before running the casing and making a test of the sand topped when the heavy gas flow was encountered. This should be here by the first of the week.

No. 4 Williams in the Madison district, Section 30-30-15, is reported to have cemented in on top of the producing sand at a depth of approximately 1,700 feet, and will drill in when the cement is set. This is not officially confirmed, however.

The Southwestern Development Co., operating on the Atteberry tract, 6 miles north of Aztec, Section 24-31-11, is drilling and expects to reach the Farmington sands at a depth of about 1,300 feet.

The San Juan Petroleum Corp., operating on the J. M. Palmer tract, a half mile west of the town line, is still trying to get a complete water shutoff. The gas flow continues satisfactory and the well will be saved for a gasser.

W. R. Childers, operating in the Seven Lakes district, is reported to have topped the shallow sand at a depth between 300 and 400 feet, and had good showings of both gas and oil. The Midwest Refining Co., in the discovery well on the Hospah structure, is going deeper and is nearing 1,800 feet.

The Klem Syndicate, operating on the Bayfield structure, is nearing the Farmington sands, expected at something over 700 feet. The suits instituted by the Federal Government to stop operations on

(Continued on Page 137)

Plan Gas Line from Wyoming to Utah

Baxter Basin Wells May Supply Salt Lake City La Barge Pipe Line. Storms Halt Operations in Rocky Mountain Area

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Apr. 16.—Heavy snows throughout northern Colorado, Wyoming, and Montana have caused the shutting down of all field work in the wildcat districts and a slowing up in all the fields. The oil operators are getting anxious over their dams and ponds where water is impounded for the summer's work. Large heads of water at this season mean destruction of the earth dams unless careful watch is kept and flood conditions relieved.

Prospects are bright for the laying of the line from the Baxter Basin Field in Sweetwater County, Wyoming, to Salt Lake City to carry the gas from the wells in Baxter Basin to the Utah city. The Ohio Oil Co. considered this project three years ago and went so far as to survey the route, but political difficulties at the Salt Lake end prevented the laying of the line at that time.

Baxer Basin developed into a gas field when the different firms owning leases there drilled the area. The wells were shut in, except those belonging to the Producers & Refiners Corp., and this firm laid a 4-inch line to Rock Springs and obtained a franchise to supply that city with natural gas. Later, the Producers & Refiners turned over its gas business in Wyoming to the New York Oil Co., and the New York Oil Co. now controls the Rock Springs gas line and distribution systems. The Baxter Basin gas contains sulphur in objectionable quantity, and a special plant has been built at Rock Springs that desulphurizes the gas before it passes into the city's distribution system. Only two wells are utilized to supply the gas to Rock Springs.

Last summer, the Myers interests drilled a wildcat on the Hiawatha Dome, lying across the Colorado and Wyoming line in Sweetwater County, southeast of the Baxter Basin Field. The well developed a strong gas flow and appears to open another large gas field similar to the Baxter Basin.

The Ohio Oil Co., the Midwest Refining Co. and the Prairie Oil & Gas Co. have reached an agreement to co-operate in the gas found at Baxter Basin towards the supplying of gas for Salt Lake City and other points in northeastern Utah. The Myers interests, on the Hiawatha Dome, have also come into the agreement, according to reports; and the Hope Engineering Co. is now figuring on the cost of the construction of the line, looking to the laying of same this spring and summer.

LaBarge Pipe Line

The LaBarge Field will have a pipe line this season if plans mature. The California Petroleum Co. has made application to the State Board of Equalization for a certificate of convenience for the laying of a line from the field to a rail point, a distance of about 40 miles.

This company had installed a large tank last fall to make a test of the production in LaBarge during the winter. This test was to determine whether a line was warranted by the present production, and the result seems to be favorable for the laying of the line. This will give every well in the field a chance to produce at its capacity, and also give the actual production of the field, which has never been known, owing to variations in estimates of what the wells will make.

In the LaBarge Field, the Rainbow Oil Co. has two wells drilling, No. 3 at 640 feet, and No. 4 is hitching on the beam. The California Petroleum Co. has completed three new wells at various depths in the shale between 780 and 1,000 feet. on Section 3-26-113 and 34-27-113. One is reported good for 130 bbls., and the other two are said to be good for 150 bbls.

In the Crooks Gap development, in the corner of Fremont and Carbon Counties, the Zola Oil Co. has abandoned its wildcat after drilling to 3,490 feet on Section 25-27-93. This is the operation where the Producers & Refiners found one well that appears good for 50 bbls; and though several more have been drilled in the vicinity, no further production has been found.

New Drilling Record

In the Big Muddy Field, east of Casper, Natrona County, the Continental Oil Co. has set a new record for rotary drilling and the completion of a deep well. This new producer is on Section 8-33-76, and found the pay at 3,706 feet in the Lakota sand. The well was drilled in 24 days, and is a record for a deep completion in this territory.

In the Newcastle Field, Weston County, the Westco Oil Co. is reported to have a 50-bbl. well at 1,680 feet, with 20 feet of pay. The well is the first to be reported a completion from this field in several months.

In the Bates Hole country, south of Casper in Natrona County, the Greybeal Oil Co., drilling on the structure of the same name, is shut down on account of snow. In the Bolton Creek Field, all communication has been shut off by the heavy snow, but the last report from that operation stated that the Iowa Wyoming well on Section 4-29-81 had reached the Tensleep sand and found carrying water, and that the well would now be plugged back to the Embar for a test in that formation, as the Embar carried some oil when it was drilled.

In Carbon County, Section 28-26-86, the Portland Oil Co. has started work again, after the winter's shutdown, with the hole at 3,112 feet.

In the old Brenning Basin Field in Converse County, O'Bannon & Barker have a 5-bbl. well at 300 feet, Section 8-32-75.

The North & South Railroad, now operating from Illco, near Casper, to the Salt Creek Field, has been bid in by Chicago, Milwaukee & St. Paul Railroad. In case the bid is accepted, it has been given out here that the Milwaukee will complete the North & South road to Miles City, Mont., and may also build south to Rawlins, from Casper.

Utah and Colorado

The Utah development remains practically the same as last week, the discovery well at Cane Creek is shut down, the Snowden & McSweeney well on the same structure is drilling at 1,300 feet and nothing may be expected at this well until it reaches a depth of 2,000 feet. The Shafer Dome well, 5 miles south, has the hole at 5,500 feet and is drilling slowly in salt after passing through some shale. The Elk Ridge wildcat of the Midwest is drilling at 1,370 feet.

The snow storms of the past week have shut down the field work in northern Colorado. Walden is producing and two wells are drilling there. The new well of the Midwest Refining Co on Iles Dome, Moffat County, reported last week as good for 1,900 bbls. in the Sundance sand, is now considered good for 2,400 bbls. This black oil will be valuable later but at present it is rather a drug on the market.

Work was stopped by the storm on the big gas line now being laid by the Midwest Refining Co. and the Wyoming Gas Co. from the Buffalo Basin Field to a junction with the present line supplying the cities and towns in the central part of the Big Horn Basin. The present system is also having trouble due to the heavy snows and that part of the line near Nowood was not working on account of the snow.

The storm caused a situation in the Lance Creek Field that threatened serious trouble for a time. Four feet of snow on the level fell in Niobrara County where the Lance Creek Field is located. This snow is quite wet and heavy and caused the roof of the only store in the field to collapse, resulting in a fire that destroyed nearly all the supplies in the field, and for a time threatened starvation to the 300 workers and their families.

The Salt Creek Field had no completions to report the past week. This is partly due to the storm and also partly on account of the Midwest Refining Co. having no wells close to the sands.

Montana Completions

In Montana the snow has held up the work in the fields as badly as in Wyoming, though a number of completions were made in the first few days of the storm. One big well was brought in at Sunburst, on the Lorensen lease, by the Hill and O'Neil interests. This producer started off at 1,000 bbls. daily from the Ellis sand at 1,478 feet.

The Homestake Exploration Co. brought in a well good for 50 bbls. in the central part of the old development and the Ski-U-Mah Oil Co. on the Haskins lease came in as a 150-bbl. producer. The Ohio Oil Co. completed three wells in Section 32-35-1 on the Putnam ranch that were measured as 4, 10 and 100 bbls. respectively. The same company has a 20-bbl. well in Section 10-35-2. All the above are in the Ellis sand.

The Geological Survey has moved the western Wyoming supervisor's office from Fort Washakie, on the Shoshone Indian Reservation near Lander, to Thermopolis. From now on the work of supervising the oil fields of the central and northwest part of Wyoming will be carried on from Thermopolis as headquarters. This will not affect the Casper office except that one of the three government engineers will be transferred from Casper to Thermopolis. John Frost will be the petroleum engineer in charge of operations at Thermopolis.

The government shale oil plant at Rulison, Colo., will close down June 30 on account of there being no appropriation made by Congress to carry on the work of testing what oil shales will produce as a commercial proposition. However, some of the tests will be carried on by the State of Colorado at the University

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HEAVY FLOW OF WET GAS FOUND IN TURNER VALLEY WELL DEEPENED

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., Apr. 16.—In the Turner Valley Field, southwest of Calgary, Dalhousie Oil Co. No. 1, LSD 4, Section 18-20-2w5, has encountered a heavy flow of wet gas at 3,620 feet. The diamond drill is thought to be in the top of the Madison limestone. Dalhousie No. 1 is the old Southern Alberta Oil Co. No. 1 flowing well, which got a commercial production of light oil around 3,500 feet. Last year, when the Southern Alberta interests were taken over by the Dalhousie, it was determined to carry the old No. 1 producer into the Madison limestone. The well was drilled to 3,600 feet and cemented, and recently resumed with a diamond drill outfit for the drilling in the deep lime. Following the wet gas strike, a core is being taken to determine the formation.

Bad roads in Turner Valley are reported to be holding up the hauling in of material to the site of the new Imperial-Millarville No. 1 test, SE Section 26-20-3w5, in the north end of the valley.

Extensive filing by Toronto interests in the Cypress Hills district, southeast of Medicine Hat, has directed attention to the possibilities of southeastern Alberta and southwestern Saskatchewan. Acreage blanketed by the Toronto syndicate lies in Townships 7 and 8, Ranges 1 to 5, w4, on the west side of the Cypress Hills forest reserve. The area was surveyed and mapped by the geologists for the Toronto syndicate some time ago, the Sweetgrass Hills uplift connecting with the Kevin-Sunburst Field in Montana being the key to operations. The geologists claim a perfect closure on the northwest is given by a fault with a 900-foot drop. Two "saddebacks" with connected area were covered, making what is claimed to be one of the best petroleum prospects in the province. All the leases filed, amounting to 80,000 acres, are in Alberta, though the Cypress Hills forest reserve itself is close to the Saskatchewan boundary. Some $50,000 was paid in filing fees on the acreage. It is claimed that the Toronto syndicate represents New York financial interests that have been operating for oil in South America.

Geologist's Report

Dr. W. S. Dyer of the Geological Survey of Canada has covered this area, and a report embodying his finding will shortly be issued. Doctor Dyer worked last season in the Cypress Hills district. By careful leveling of certain distinctive formations, the report says, unexpected structural features have been determined. Evidence has been obtained which shows that the structure of the rocks underlying the Cypress Hills is favorable to the accumulation of oil or natural gas. Doctor Dyer states in his report that the structures "are commensurate in area and rate of dip with the Kevin-Sunburst Dome of northern Montana. They should prove to hold oil or gas, provided the underground conditions are right. These include the presence of porous sands suitable for reservoirs and beds capable of generating petroleum. The Milk River sandstones, which hold so much gas at Medicine Hat, might quite possibly be oil bearing in this more pronounced structure.

"Other favorable horizons would be sandstone beds in the Colorado, the Blairmore-Kootenay sands, the Jurassic (Ellis) sand or limestone and the Palaeozoic (Madison) limestone, all of which can be reached at reasonable depths. Oil showings were met with in the Drazan well in the Many Islands Field in the Blairmore-Kootenay and in the Jurassic.

"In the Roth well at Medicine Hat oil showings were found in the Ellis sand at the top of the Palaeozoic, and several

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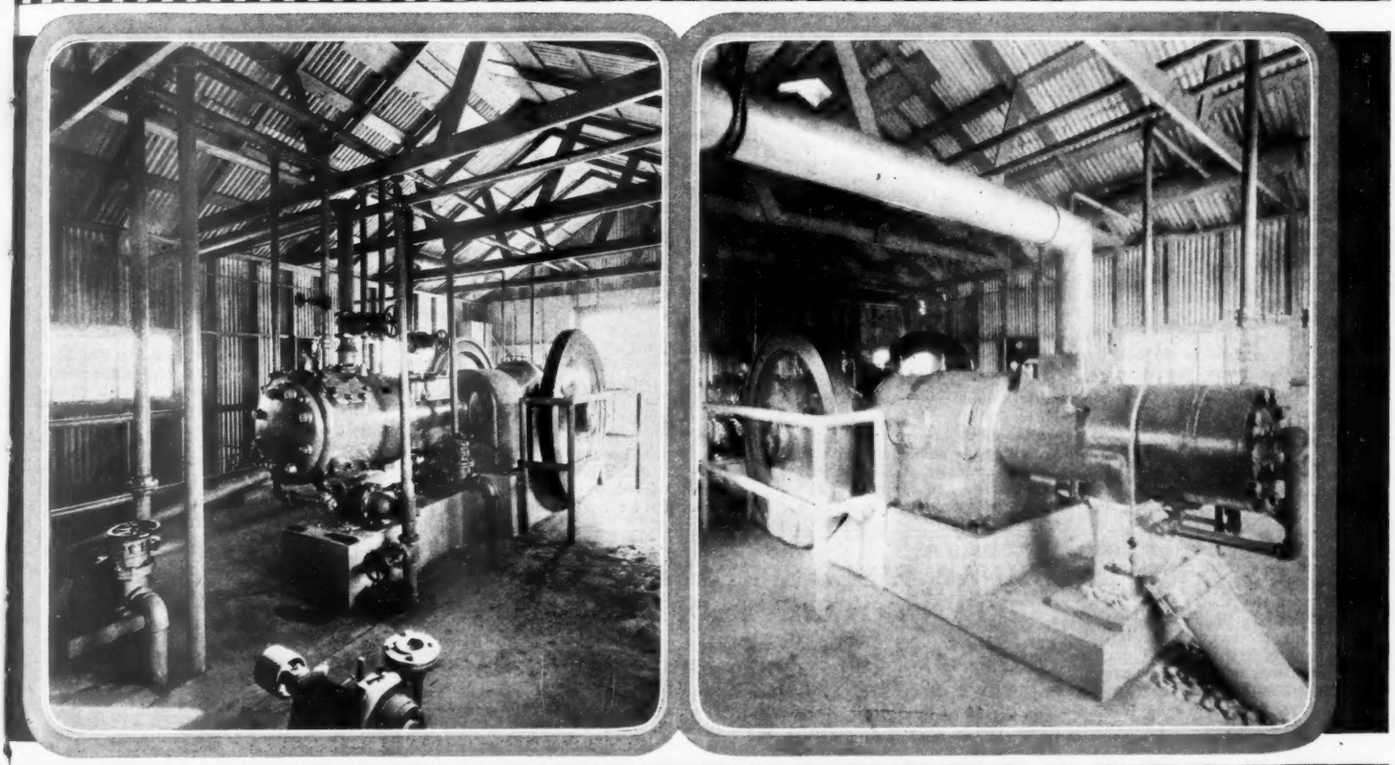
wing Machine"

says Mr. Charles Knox, of his CLARK TANDEM Compressor, which is used in air-lift installation at his Covington plant



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Good Producer in Celina Field, Clay County. Ambrose Field, Ohio County, Ky., Extended by 200-Bbl. Well

By Whit
Staff Correspondent, Kentucky-Tennessee

BOWLING GREEN, Ky., Apr. 18.—With a slight improvement in weather conditions over the Kentucky - Tennessee fields, more completions are reported, but not nearly as many as there should be. In the eastern portion of Kentucky work is slack which is due to the price of crude and high waters in lowlands, which usually must be forded when transporting material from the supply points to lease locations. The feature of the past several days comes from the Ambrose Pool in Ohio County, in the western division, there being two wells above the century class and one which is west of production extending the field at least a couple or more locations. The latter well is on the Mary J. Elmore farm, west of the Scott Ambrose 52 acres and had an initial of 200 bbls. from a depth of 741 feet; No. 9, on the John R. Weller 110-acre farm, is reported at 150 bbls. initially, while the Dean and Owen farm shows a 75-bbl. initial producer, in the same county.

The Celina Field, of Clay County, Tennessee, also came in for its share when the second well on the Lem Cunningham farm, in the McClurkin Pool, started flowing at the rate of 60 bbls. per hour at 100 feet below the Pencil Cave formation at a total depth of 580 feet. This well is bound to encourage more active development work along the Mill Creek anticline and in fact, in all directions from it for thousands upon thousands of acres have been taken under lease recently around Red Boiling Springs in both Clay and Macon Counties and clear across the State to the Alabama line where new structures are being worked out by several geologists.

Week's Work

The summary of the week's work in the Kentucky-Tennessee fields shows 24 completions, 19 producers, with an initial production of 836 bbls. and 5 dry holes. When compared with the previous week, there were 14 more completions, 10 more producers, 417 bbls. more production and 4 more dry holes and no gas wells brought in. These wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry
Barren	13	10	62	3
Ohio	5	4	450	1
Allen	2	1	1	1
Cumberland-Monroe	1	1	3	0
Kentucky	21	16	516	5
Tennessee, Clay County	3	3	320	0
Total	24	19	836	5
Last week	10	9	419	1
Difference	14	10	417	4

Oil Runs for March

The three pipe lines making reports from the Kentucky-Tennessee fields are the Cumberland Pipe Line Co., handling crude from as far west as the Wayne County Field and east to the division line between Kentucky and West Virginia; the Illinois Pipe Line Co., in the western division; and the Paragon Development Co., in Cumberland-Monroe and Clinton along with Barren Counties, Kentucky, and Clay and Pickett Counties in Tennessee, which does not include the crude handled by the Stoll Oil & Refining Co., in Barren County. In the Kentucky end of the field, the three companies handled a total of 398,608.10 bbls. from Kentucky, and 2,403.13 bbls. from Tennessee.

The Cumberland Pipe Line Co.'s runs from Kentucky during the four weeks of March totaled 244,955.03 bbls. The runs for the week ending March 5, were 62,046.42 bbls.; week ending March 12, 57,757.92 bbls.; week ending March 19, 64,571.13 bbls.; week ending March 26, 60,579.56 bbls.

During the month the Paragon Developing Co. ran from the Barren County Field 16,335.43 bbls., and from Cumberland, Monroe and Clinton Counties, Kentucky, 13,657.62 bbls, a total of 29,993.05 bbls.

The Paragon Development Co. ran during March from the Clay County, Tennessee fields a total of 1,998.51 bbls., and from Pickett County, 404.62 bbls., making this company's total runs from the two states for March of 32,396.18 bbls.

The Illinois Pipe Line Co. handled through its western Kentucky lines a total of 122,660.02 bbls., for March, against 98,497.45 bbls. for February, a gain of 24,162.57 bbls. The heavy runs were due to the good production uncovered in the Ambrose Pool, of Ohio County.

Western Kentucky

No completions were reported during the week from the fields in the eastern portion of Kentucky, the new wells being confined to the western portion, with Barren County leading in number of new wells but only a small initial production compared with that found in the Ambrose Pool, in Ohio County. Warren County failed to report any new completions, although a number of wells are getting down to a stage where they should soon be brought into production.

According to advice, Dr. W. R. Jillson, state geologist of Kentucky, has issued a new oil and gas map of the western Kentucky producing area in a scale of 1 mile to the inch, with the producing areas shaded showing the location of both oil and gas-producing sections.

Ohio County

The Ambrose Pool, in Ohio County, several miles to the north of Hartford, the county seat, and around 10 miles or so from Whitesville, is the closest watched area of Kentucky. This is natural in a way, owing to the good producers being found and with prospects of extending the pool over a wider area of territory. A slight extension was made to the Ambrose Pool when the Wood Oil Co. drilled in No. 1 test, 1,475 feet from the north line, 2,125 feet from the south line, 180 feet from the east line and 2,500 feet from the west line of the Mary J. Elmore 100-acre lease, which adjoins the W. Scott Ambrose 52 acres on the west, and the farthest producer to the west so far within the limits of the pool. A string of 668 feet of casing was set in the well, top of sand at 668 feet and bottom at 736 feet, and drilled to a total depth of 741 feet and shot with 200 quarts, responding with an initial production of a little better than 200 bbls. Same company's No. 2, on the Dean and Owens 54 acres, in the same pool and east of the Ohio Oil Co.'s lease on the J. C. Ellis 204 acres, showed an initial of 75 bbls. In this well a string of 420 feet of casing was set. The first sand was topped at 443 feet and 26 feet of sand was drilled through then a 11-foot break was found and another sand struck at 480 feet where a sand 5 feet in thickness was passed through and the hole drilled to a total depth of 500 feet and shot with 100 quarts.

James C. Ellis, the native operator, is considered by the community to be lucky as he has brought in his ninth consecutive producer on the John R. Weller 110 acres, in the Ambrose Pool and none of them showed less than an initial of 100 bbls. No. 9 is in the northwest corner of the lease and south of the Ambrose leases. This well required a string of 658 feet of casing, top of sand at 658 feet, bottom of sand at 702 feet and total depth 704 feet. Shot with 160 quarts it showed an initial production of 150 bbls. No. 10, same farm, is reported making a nice showing.

In the Swope Pool area, northeast of the Ambrose Pool, the Chicago Petroleum Syndicate's No. 6, on the Nannie Brown 80 acres, set 486 feet of casing, struck top of sand at 486 feet, struck first Jett sand from 488 to 500 feet, then a break from 500 to 520 feet, when the top of the second Jett sand was found from 520 to 525 feet and drilled to a total depth of 537 feet and given a 60-quart shot. The well had an initial of 25 bbls.

The Wood Oil Co.'s initial well, on the Ira Wallace farm, District 10, near Aetnaville, in the eastern part of the N half of Ohio County, set 684 feet of casing, struck top of sand at 692 feet and bottom of sand at 704 feet, and after drilling a pocket of 13 feet below the sand at a total depth of 717 feet, was shot with 60 quarts and had an initial production of 10 bbls. No. 2, same farm, proved a dry hole.

H. A. Henry is drilling his No. 3 on the S. V. Flowers 32 acres, in the northern part of Ohio County, south of the Herbert School and west of the Lon Helm property. This lease was recently purchased by Mr. Henry from the Kentucky Oil Co.

Barren County

In the Glasgow Field of Barren County, the drill was active the past few days, registering 13 new completions for the county. In the Gorby Pool, the Stohr Brothers Oil Corp.'s No. 6, on the Dearing lease, is a 3-bbl. pumper at 430 feet.

In the Emery-Moore Pool, the Merrifield-Sinning Oil Co.'s No. 4 Hale farm is good for 5 bbls., and No. 5 is good for 2 bbls. Esslinger, Scott & Hice's No. 10, on the Bradford lease, pumped 2 bbls. at 563 feet.

In the Lecta Pool, some 3 miles southeast of Glasgow, Sanson, Norris Brothers and others' No. 4, on the J. W. Browning farm, found pay in the Slate sand, reported good for 30 bbls. initially. Same firm has a dry hole on the Samuel Browning farm, and the same parties have a dry hole on the Boles farm, as well as a 2-bbl. pumper at No. 1 on the W. S. Cary farm, the oil being found in the Blue sand.

In the same pool, Pedigo & Pape's No. 1, on the Browning, is a 4-bbl. pumper. Harrington, Norris Brothers and others have the same kind in No. 3 on the C. B. Jones farm, at a reported depth of 540 feet. Ziegler Brothers' No. 4 Dean farm is showing for a 2-bbl. pumper. Wood Oil Co.'s No. 1 Pace farm showed 4 bbls. from the Blue sand. J. D. White's No. 1, on the Nichols farm, pumped 8 bbls. Baird and others are drilling No. 1 Nichols land, and Esslinger Oil Co.'s No. 1 Franklin farm is drilling. No. 2, same farm, is drilling as is the Wood Oil Co.'s No. 2 on the Nickels property. No. 2 Nichols lease is being drilled by J. D. White.

Other Developments

On Crocus Creek, in the northern part of Cumberland County, near the Adair County line, Wood-Haislett, McLennon & Calhoun's No. 9, on the E. H. Brockman lease, showed an initial of 3 bbls. at 345 feet. In Pulsey Creek area, a

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SAGINAW FIELD SPREADING OUT; TOWN LOT DEVELOPMENT GROWING

By Whit
Staff Correspondent, Michigan Fields

SAGINAW, Mich., Apr. 15.—Much change is noticed in a trip over the Saginaw Field. Several months ago the producing area covered only about a mile north and south and only a trifle over that east and west, while today the field is tested at least more than 2½ miles east and west and close to 2 miles north and south, with prospects of widening a considerable more. It appears to be a real oil field as far as it has gone and there are now within producing limits locations for at least 300 additional wells, but the average operator does not feel inclined to do much development work with the market price of crude as it now stands as several announced they would prefer to leave the oil in the ground until prices showed a betterment. The cost of a Berea sand well in the Saginaw Field runs from $9 000 to $10,000, and while one large producer was found in the field, the others are only small producers averaging as a whole around 8 bbls. per well, for 163 producers. Were these wells all located on acreage property their average would be much larger but a great number of them are on town lots and the Berea sand is being heavily drawn upon for each well owner tries to get the oil as fast as the crude can be pumped into storage. The average well within the town lot development so far has proven to be a bit larger in initial production than out on the acreage property, which means that Saginaw, at least the north half of it, is undoubtedly one of the main parts of the field.

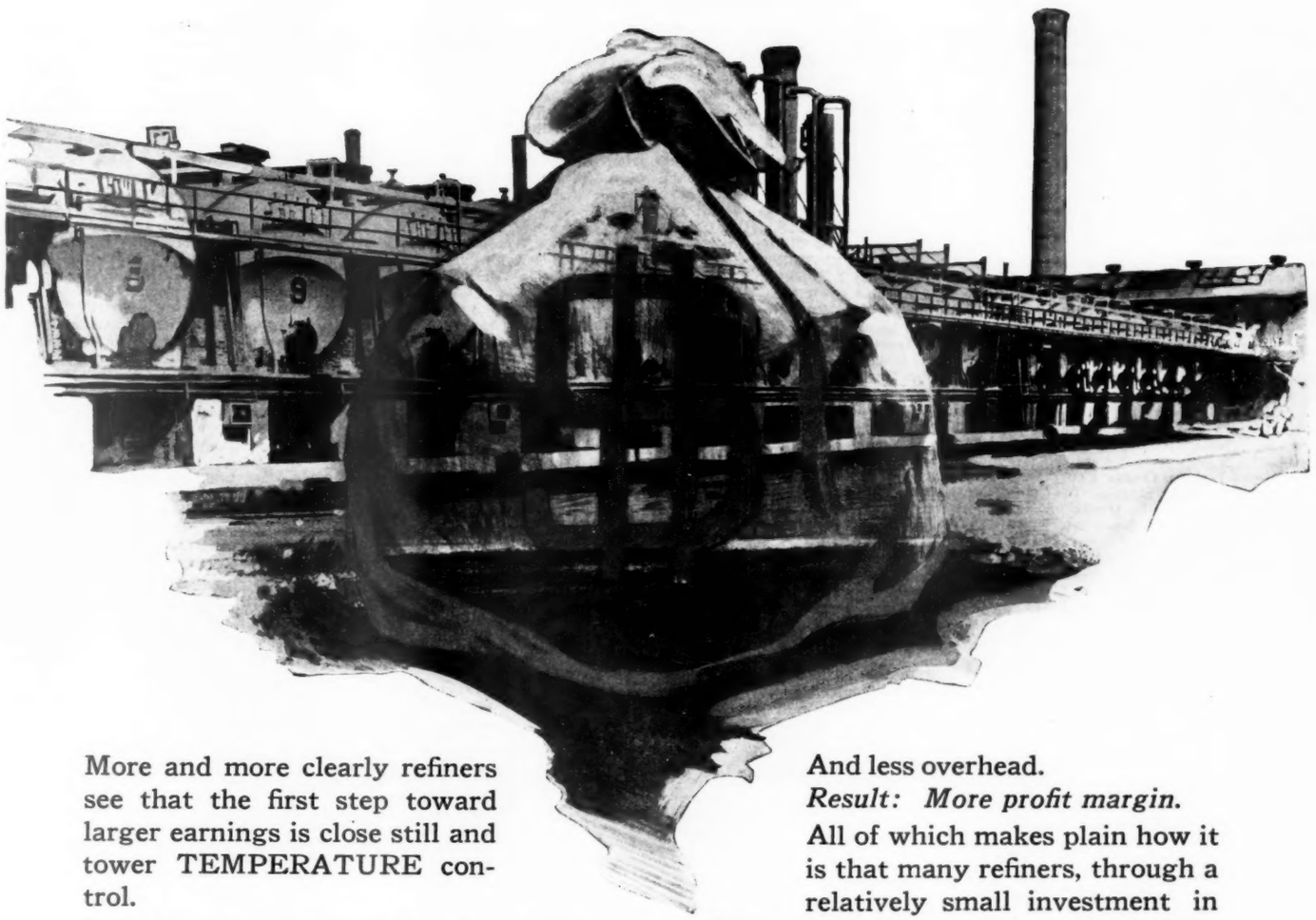
Town lot development has seldom proved a paying proposition owing to the heavy drain upon the producing rock from wells that are close up together, and Saginaw investors in town lot operations will fare no better than other town lot drilling in any of the known fields of the country. Usually the first few wells brought in may show a profit, but it, the long run it proves a loser. Wells are being drilled on lots where business houses are located and in the back yards of residence property and are getting pretty thick to the south of the Saginaw city limits to the north and west of the Saginaw River. Covering an area of the city, for seven blocks north and south and about 10 blocks east and west, there are close to 65 wells in and under way and many others to be drilled. On the dock on the east side of the Saginaw River, only a short distance from the river bridge almost in the heart of the city, is a well under way right up against business blocks, with just enough room for the derrick. Not over a block from the Bancroft Hotel, which is on the two main streets of the city, West Genesee Avenue and Washington Street, a well is under way and others to be drilled.

Town Lot Drilling

How long this town lot drilling will stand remains to be seen, but if talk is

(Continued on Page 114)

Speed up plant investment turnover



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Eastern Fields Have Fair Producers

But Fewer Wells Were Completed and the New Production Was Much Below the Average for Many Weeks

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Apr. 18.—Development work lagged all through the week, and the result was that fewer wells were completed and the new production was much below the average of any previous week.

In Section 6, Jackson Township, Guernsey County, Ohio, W. McK. Smith and others have completed a second test on the Andrew Slabine farm, good for 180 bbls. a day, in the Niagara lime.

In the southeast quarter of Section 20, Harrison Township, Perry County, William Cline and others have completed a test on the L. Bennett farm. It flowed 90 bbls. the first 24 hours after shot. In Section 23, Pleasant Township, same county, the Allegheny Oil Co. completed in the Berea grit No. 18 on the Elizabeth Bressiford farm. It is dry and abandoned.

Licking County

In Section 11, Franklin Township, Licking County, Smith, Hazlett & Co. have completed in the Berea grit No. 4 on the D. E. Dustheimer farm. It is a 5-bbl. pumper. In the SW of Section 11, Pike Township, Coshocton County, the Leonard Oil & Gas Co. has completed a test on the Edward Young farm. It is dry in the Clinton sand.

In Lot 25, Hardy Township, Holmes County, the East Ohio Gas Co. has completed and shot in the Clinton sand No. 3 on the John R. Hastings farm. It produced 85 bbls. the ensuing 24 hours. In Section 5, Killbuck Township, the Kemrow Co. has completed a test on the L. B. Mohler farm, good for 8 or 10 bbls. a day in the Clinton sand. In Section 13, the same company is due in the Clinton sand at a second test on the A. C. Fites farm. In Section 12, the Leonard Oil & Gas Co. has rigged up and started to drill on the Roy M. Purdy farm. In Section 7, the Ohio Oil Co. is drilling in the sand on the Oliver Smitheiser farm. In Section 16, the Empire Gas & Fuel Co. is due in the sand on the D. Nethrow farm. In Section 2, Franklin Township, Licking County, Moore & Adams have started to drill for a Berea grit producer at a test on the C. O. Neibarger farm.

In the SE of Section 21, Washington Township, Hocking County, the Gordon Oil Co.'s No. 3 on the J. A. Kitchen farm, produced 37 bbls. the first 24 hours after completed and shot in the Clinton sand.

In Section 1, Jefferson Township, Knox County, the Upham Gas Co. has a light gasser on the George W. Sapp farm. In Section 8, Brown Township, the same company is due in the sand at a test on the J. J. Workman farm. In Vinton County, the Varlow Oil Co. is due in the sand on the E. Garlow farm.

Guernsey County

The Ohio Fuel Supply Co. is due in the same formation at a test on the M. M. Fulton farm. In the same section, Smith and others are drilling a test on the Willis Cox farm. In Section 10, Westland Township, the Pure Oil Co. is drilling a second test on the J. L. Chapman farm. In the same section, the same company has a 40-bbl. producer in the Niagara lime at a test on the Frederick Gillman farm. In Section 17, Cambridge Township, George E. Jewell and others are due in the sand at tests on the Emmet Eweres and John Vincent farms.

Holmes County

In Section 21, Killbuck Township, the East Ohio Gas Gas Co.'s tests on the F. H. and L. E. Garver and Frank Galley farms are gassers. In Section 39, Hardy Township, the same company has a 60-bbl. producer in the Clinton sand at a test on the Etta J. Nowells farm. In Sections 23 and 25, the same company is drilling tests on the Jacob Uhl and J. R. Hastings farms. In Section 18, Prairie Township, the Pure Oil Co. is due in the Clinton sand at a test on the Isaac F. Snyder farm. The same company has a rig up on the Byron Kendall farm. In Section 24, Paint Township, the Logan Gas Co. is due in the Clinton sand at a test on the James P. Miller farm.

In Fallsbury Township, Licking County, Wiggins & Co. have a duster at a test on the W. W. McKee farm. In the same township, Stoffer & Co.'s No. 9 on the James Chaney farm is good for 20 bbls. a day in the Berea grit. In Franklin Township, Moore & Adams have a very light pumper at No. 7 on the P. L. and Mary E. Wolfe farm. In Section 10, Hopewell Township, the Pure Oil Co. is due in the Clinton sand at a test on the J. C. Ensworth farm. In Lot 10, Hanover Township, the Edward H. Everett Co. is fishing for a bit at a second test on the L. Swigard farm.

In Section 10, Fallsbury Township, Poulton Brothers, Brown & Co. have a 5-bbl. pumper at a test on the Charles Fisk farm. In Section 24, Reading Township, Perry County, the Hutchinson Oil & Gas Co. has started to drill a test on the W. F. Hutchinson farm. In Section 23, Richland Township, Fairfield County, the Rush Creek Oil & Gas Co. has started to drill another test on the Robert Hyde farm. In Section 12, Rush Creek Township, the Flagdale Oil & Gas Co. is drilling No. 15 on the Graffis heirs' farm. In Section 5, Switzerland Township, Monroe County, the American Oil & Gas Co. is due in the sand on the Albert Straight farm.

West Virginia

West Virginia completed one fair producer. On McFarlan Creek, Murphy district, Ritchie County, Cochrane & Hayes have drilled their second test on the McGregor heirs' farm into the Big Injun sand, and the well is flowing at the rate of 60 bbls. a day.

G. T. Ray & Son have completed a test on the Sidney Adkins farm, in Sheridan district, Lincoln County. It is a gasser in the Berea grit. In Carroll district, same county, L. R. Sweetland has completed No. 17 on the L. R. Sweetland farm, a fair gasser in the Berea grit. On the Martha Hicks farm, same district, the Maul Rock Oil & Gas Co. has a Berea grit gasser. In Carroll district, the Columbia Gas & Electric Co. is due in the Berea grit at a test on the J. B. Johnson farm.

Wood County

In Walker district, Wood County, the Hope Construction & Refining Co. has a duster in the Berea grit at a test on the Roberts heirs' farm. In the same district, Dollman & Kingery have a rig completed on the J. B. McCracken farm. The South Penn Oil Co. is drilling at 500 feet on the Sarah McPeak farm. The same company has started to drill on the George F. Albright farm. In Union district, the same company is drilling and due in the Berea grit at No. 15 on the John Alleman farm.

On Rush Run, Smithfield district, Roane County, the United Fuel Gas Co. has completed in the Big Injun sand No. 3 on the Asbury Lewis farm. It is a gasser good for 500,000 feet. In Geary district, Noble Beattie has light pumpers at tests on the Saler and Smith heirs' farms. In Ravenwood district, Jackson County, Edgar Boehm has a duster in the Cow Run sand at a test on the Thomas Buch farm. In the same district, the King Oil & Gas Co. is due in the sand at a test on the Alexander White farm.

In Sherman district, Calhoun County, C. B. Lewis & Co.'s test on the M. Kelley farm is a gasser in the Big Injun sand. In the same district, the Hope Construction & Refining Co. has the rig completed for a second test on the E. F. Dewees farm. In the same district, the same company is trying to exhaust the salt water at a second test on the Okey Parsons farm.

Clay County

In Henry district, Clay County, development work has fallen off and little new work starting. In this development, the Virginian Gasoline & Oil Co. has completed in the Big Injun sand No. 9 on the Lockhart tract, estimated good for 15 bbls. a day. In the same district, the same company has completed in the same formation a test on the Brown, Swan, Goshorn & Butler farm, estimated good for 25 bbls. a day after shot.

In Geary district, Roane County, Noble Beattie completed in the Big Injun sand a test on the Smith heirs' farm. At the time, it was reported good for 5 bbls. a day. It will be abandoned. The location is 3,500 feet north of the second test on the Fred Smith farm.

In Grant district, Pleasants County, the Faith Oil & Gas Co. has a 7-bbl. pumper in the Big Injun sand at No. 5 on the Hammett heirs' farm. On Dutchman Run, Murphy district, Ritchie County, the Southern Oil Co. has completed in the salt sand No. 8 on the A. E. Ryan farm, good for 5 bbls. a day.

In Grant district, Ritchie County, the Hope Construction & Refining Co. has a fair gasser at a test on the J. M. Lewis farm. In Clay district, J. A. Glass & Co. have a duster at a test on the Miller heirs' farm. In the same district, the Victory Oil Co.'s test on the J. F. Goodwin farm is a duster.

Cabell County

On the waters of Mud River, Grant district, Cabell County, 3½ miles south of Beckett Station, the Monickel Gas Co. has drilled a test on the C. A. Nichols farm into the Berea grit. It is a light gasser in that formation. On the same stream, 3,500 feet west of the above well, the same company has started to drill a test on the C. R. Finley farm. On Mud River, 1 mile north of the mouth of Trace Fork, C. C. Wolfe and others have started to drill a test on the J. M. Bird farm. On the Charles Gillenwater farm, Meabon & Huffman have started to drill No. 7.

In Clay district, Monongalia County, the Swastika Oil & Gas Co. has drilled its test on the D. R. Wright farm from the upper to the Bayard sand. It is a good gasser. No oil was found in the upper formations. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has a gasser in the Gordon sand at a test on the W. A. Evans farm. In Ten Mile district, Harrison County, the South Penn Oil Co.'s test on the Elizabeth Fletcher farm is good for 15 bbls. a day in the Gordon sand.

Mingo County

On Slick Rock branch of Breeden Creek, Harvey district, Mingo County, the Public Gas Corp.'s No. 10 on the Henry Closterman farm, previously reported a gasser, has been drilled 109 feet

(Continued on Page 117)

LIMA AND INDIANA FIELDS LEAD IN CENTRAL WEST COMPLETIONS

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 16.—A slight improvement is noticeable in parts of the Central West Field, brought about by a few days of sunshine, while in other parts heavy rains have prevailed, bringing high waters in all streams and making the muddy roads almost impassable. The Lima and Indiana fields lead in completed work, mostly confined to territory within defined limits and a few that are a short distance away from former production. The finding of two wells in Reeves Township, Daviess County, in southwestern Indiana, looks as though a new pool is in the making. No. 1 on the Pat Nolan farm, Section 13, showed an initial of 22 bbls., while the second well just in is reported showing for 40 bbls. initial. No. 1 on the Morrison property, Section 19, Washington Township, Pike County, showed an initial of 8 bbls. A test well, north of Hope on the Spaugh land, in Ham Creek Township, Bartholomew County, was a duster. One of the same kind was struck on the Ryan land, Section 31, Clay Township, Spencer County, while a test on Thomas Spencer's land near Monon, in White County, is reported as having a showing of oil, but as yet uncompleted. A wildcat in Center Township, Gibson County, on the George Annis lease, Section 28, proved a duster, also in the Indiana Field. In Illinois only one completion was recorded, being in the Robinson Field, in Martin Township, Crawford County, good for a 2-bbl. pumper.

All completions in the Lima Field were confined to territory that is considered good for small pumpers. Central Ohio is credited with one good oil well, with an initial of 85 bbls., in No. 3 on the Hastings farm, Lot 25, Hardy Township, Holmes County.

Lima Field

Seven completions were reported from the Lima Field of northwestern Ohio for the week, the best being a 20-bbl. initial producer drilled by L. F. McGrath, 500 feet from the south line and 650 from the east line of the Henry Ernst farm in the E half of Section 9, McLean Township, Shelby County, and No. 4 on the lease. Top of sand was found at 1,286 feet and oil at 1,318 feet. In Loramie Township, same county, Lee A. Watson's second well, 600 feet from the north line and 250 from the east line of the J. H. Barhorst farm, in the NW of Section 2, pumped 15 bbls. initial, topping sand at 1,232 feet, and went to a total depth of 1,286 feet.

In Mississinewa Township, Darke County, A. W. Neely and others' No. 3 well, 950 feet from the north line and 350 from the east line of the Oscar J. Current farm, in the NE of Section 10, pumped 9 bbls. initial from a total depth of 1,274 feet, or 48 feet in the sand, the top of the Trenton being at 1,226 feet.

In the Elmore Field, in Harris Township, Ottawa County, the Burman Oil Co.'s third well, 200 feet from the south line and 500 from the west line of the Gust Magsig farm, in the SE of Section 23, is credited with an initial of 10 bbls. with sand topped at 1,204 feet and drilled to a total depth of 1,301 feet.

In Center Township, Mercer County, R. C. Grace's No. 3 well, 500 feet from the north line and 330 from the west

(Continued on Page 117)

make the AJAX a better engine

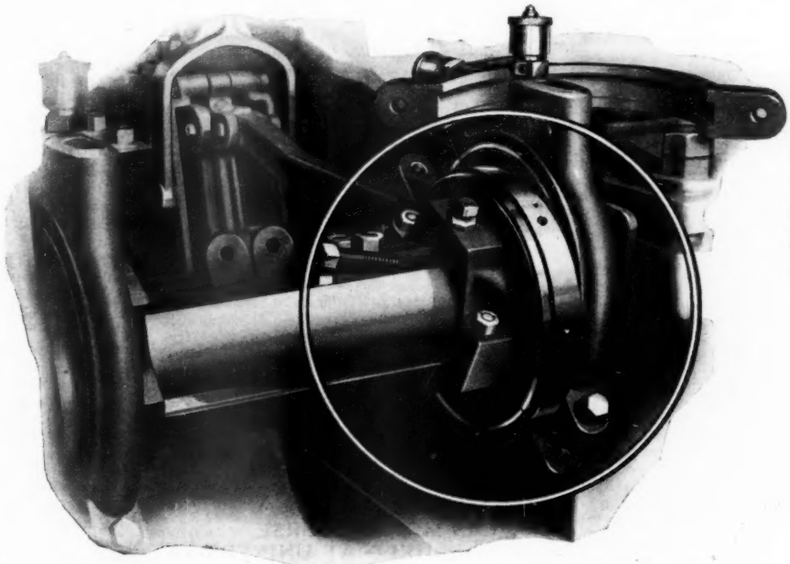
AJAX and Ideal Engines now have a bronze bushing inserted between the eccentric strap and the eccentric hub.

No More Worn Out Eccentric Straps or Hubs on Ajax Engines

The bushing takes the wear and it can be easily replaced. Eccentric straps to fit the new bushings are made of malleable iron.

Not only does the use of this better bearing metal at this important point improve the operation of the engine; it also saves the Ajax operators the necessity of replacing worn out eccentric hubs and straps in the future.

Owners of old Ajax Engines can replace with the new straps and bushings as the hubs are interchangeable with new models. National Supply Company Branches carry the new parts in stock.



Photograph shows how the new bronze bushing fits between eccentric hub and strap. It has oil holes for lubrication.

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Natural Gas Developments

NATURAL GAS FIELDS IN ALBERTA DISTRICT

By Victor Lauriston

CHATHAM, Ontario, Apr. 16.—Since the first gas well was discovered in the vicinity of Medicine Hat in 1885, 11 distinct gas fields have been located in Alberta, and 88 wells are now in position to supply 480,000,000 feet of gas per day, according to a summary of the oil and gas situation in Alberta contained in the annual report of the Council of Scientific Research and the University of Alberta, tabled in the Alberta provincial legislature a few days ago.

The section of the report dealing with the natural gas situation was compiled by Dr. John A. Allan, professor of geology at the University of Alberta.

Statistics assembled by Doctor Allan show that the total amount of natural gas sold in Alberta during 1925 was 9,119,000,000 feet, this representing a daily consumption of not more than 25,000,000 feet. "It is important to note," states the report, "that although there is an enormous difference between the consumption and the daily capacity of available wells, it does not mean that the difference represents the amount of natural gas being wasted. Most of the wells from which gas is not being used have been capped, and there is therefore no important wastage."

The report mentions that there is a considerable quantity of gas being wasted at Pelican Rapids, north of Edmonton, which in 1912-14 was exploited as the source of gas supply for Edmonton. In the Pouce Coupe district, a well with a potential production of 10,000,000 feet a day is capped. One of the largest gas wells, the Rogers-Imperial, near the Montana boundary, with a daily capacity of 50,000,000 feet, is reported to be completely capped.

"The greatest wastage today," continues the report, "is undoubtedly taking place in Turner Valley, where the average daily consumption amounts to about 7,000,000 feet, and where the daily production is approximately 45,000,000 feet. The rock pressure in the formation containing gas in this field is enormous; and after the porous rock has been encountered, it is almost impossible to hold back the gas flow completely. In the case of Royalite No. 4, the gas pressure on the well is retained to a safety point, and all the naphtha is taken from the gas that is drawn off in order to retain that safety pressure. In this particular case, less than one-half of the dry gas is sold for consumption in the field and in Calgary; the remainder, therefore, is burnt or lost.

"It seems inevitable that if oil development is going to be permitted in Turner Valley, we must expect a considerable wastage of gas for some time to come. If regulations were made to compel the conservation of gas, it would be found almost impossible to encourage capital to come into our province to develop our petroleum resources."

The report adds:

"Nature has endowed this province with an unusually enormous supply of natural gas over a wide geographic area. On the other hand, it is quite in order that regulations should require proper equipment to be used by the drilling company in order to control any enormous flow of natural gas and prevent the well from running wild. It is just as important that such regulations should apply to water as well as gas. One example might be cited. Due to lack of supervision, wells were drilled in the Peace River district; and from at least two, water and gas have been flowing for many years. They are now 'running wild,' and the chances are that this uncontrolled water has probably ruined the possibility of getting water from at least the higher horizon in that district."

Attention is also drawn in the report to the very important fact that the Dominion Government regulations apply only to Dominion lands, and these regulations do not apply to freehold lands, which include those lands held privately by the Canadian Pacific Railway Co. and by the Hudson's Bay Co. "Any regulation that is made to cover the development of petroleum or natural gas in Alberta," the report suggests, "should apply to all lands, irrespective of ownership."

BUILDING THE HOUSE-HEATING LOAD DESCRIBED TO NATURAL GAS MEN

By F. M. Rosenkrans*

New Business Manager, The Gas Service Co., Kansas City, Mo.

The subject of gas house heating is receiving much attention on the part of the gas fraternity throughout the country. We have seen the major companies becoming active in this field during the past few years. In this paper endeavor will be made to give the experience of the Gas Service Co., with which the writer is connected, in building the house heating load, the reasons why the house heating program was entered into, and some of the problems which have been encountered.

It may be well to consider some of the changing conditions in the gas industry which led to the conclusion that a house heating program was necessary to the gas company. The result of these changing conditions has been the experience, in both artificial and natural gas companies, of the trend of decreasing use of gas for purely domestic purposes. In a study of some of the reasons for this trend, we find that the present day housewife is more and more getting away from the drudgery of cooking and household tasks. The growth of the delicatessen stores and restaurants, the increase in the canned and cooked food industry, the tremendous increase in the baking industry, apartment houses and laundries, have all had the effect of taking away from the home the doing of those tasks which the housewife formerly performed. This has had a natural reflection in the decreasing of the purely domestic gas load, and these changing conditions and the results therefrom have been felt by many utility companies in this natural gas territory.

Changing Conditions

In view of these changing conditions which make the selling of increased use of gas for purely domestic purposes difficult, attention is turned to the house-heating field. The greatest domestic market which we have, and the one where we feel revenues and gas sales per customer can be increased most quickly, is the sale of gas for house heating. In selling gas for house heating, the revenues secured from customers can be improved many fold over that which is used strictly for domestic purposes; that is, cooking and water heating. It is for these reasons that the Gas Service Co. concluded to enter upon a house-heating program about two years ago. The necessity was felt for making progress in improvement in load and revenues at rates which are equitable.

In the early history of the natural gas business, when abundant gas was obtained close to cities and towns, very low gas rates prevailed. At the rates which existed at that time, gas could be used more cheaply for heating houses than any other fuel, regardless of the little or no attention which was given to the application of gas to furnaces. The heating cost, with the most inefficient application, was cheaper than using other fuels. Through the playing out of local gas fields and the necessity for long pipe lines to bring gas from more remote fields to centers, came the raise in domestic rates to provide adequate returns. With the raise in rates came the discontinuance

(Continued on Page 168)

*Before southwest division of the Natural Gas Association of America at Dallas, April 12, 1927.

TO USE NATURAL GAS IN POWER PRODUCTION

CHATHAM, Ont., Apr. 16.—The International Utilities Corp. of New York, which controls the Canadian Western Natural Gas, Light, Heat & Power Co., has made a series of offers to the city of Lethbridge in connection with the local supply of power, which foreshadow the extensive use of natural gas in power production in southern Alberta.

One proposal is to sell natural gas to the city for the operation of the municipally-owned power plant at 15 cents per 1,000 feet. An alternative proposal is to take over and operate the present municipal power plant on a rate schedule of power sold to the city ranging from 1 cent per kilowatt hour for the first 5,000,000 kilowatt hours down to 75 cents per kilowatt hour for all used over 10,000,000 kilowatt hours. A third proposal provides for the city to remain owner of the plant but to grant the company a franchise for the operation of the electric power and street railway utilities for 20 years, the company assuming and paying as they come due all interest and sinking fund charges outstanding on the utilities debentures now in force. A fourth proposal is to buy the power plant and street railway system at $1,000,000, the city giving a 20-year franchise, rates to consumers to be subject to orders of the Alberta Public Utilities Commission.

GAS METER COURSE HELD AT UNIVERSITY

The fourth annual Southwestern Gas Meter Short Course, given at the University of Oklahoma, Norman, has just completed its most successful year. The attendance was approximately 300 students. Ten states were represented. The feature this year was the publication of a 325-page bulletin covering the Course of 1926. Nothing of like nature has ever been published, and it contains some valuable tables and information on equipment used in the gas industry.

The school was divided into sections, an elementary section for consumers and beginners, a section for the natural gasoline men, and a section for meter men and plant operators. Each section held its own classroom and this method of instruction proved very effective. An examination was given at the end of the course.

The school is one of intensive training and is in no sense a convention. Leading engineers in the industry and members of the engineering faculty at the University acted as instructors. Some of the latest improvements in equipment were shown, the men getting to see it before it is displayed at the national conventions.

Prof. G. B. Helmrich, of the School of Mechanical Engineering, was director of the course and J. H. Baxter, of the Oklahoma Gas & Electric Co., of Oklahoma City, was chairman of the committee on arrangements.

HOUSTON PIPE LINE BEGINS BRANCH LINE

HOUSTON, Tex., Apr. 16.—The Houston Pipe Line Co., a subsidiary of the Houston Oil Co., has started preliminary work on its branch line from a point on its trunk system near Alvin south to Texas City. Industries at Texas City, which is on Galveston Bay, will consume between 2,500,000 and 3,000,000 feet per day.

Since the installation of the big compressor station near Edna in Jackson County, as high as 87,000,000 feet of gas has been delivered by the company in one day, which is considered a record for volumne through a 16-18 inch line. Work on the installation of a smaller compressor station at Lucas in Live Oak County has been started and when it is completed officials of the company expect to deliver more than 90,000,000 feet per day. The Lucas station will be equipped with seven 190-horsepower engines, which eventually will be increased to 20. The installation of this station will increase the volume from the Cole-Bruni and other fields in Duval and Webb Counties.

A minority interest in the Houston Gulf Natural Gas Co. has been acquired by the United Gas & Electric Co. of New York. The Houston Gulf Co. pipes gas from the Refugio and Markham Fields to Houston, delivering to industries here. The eastern company has also taken over the Houston Gas & Fuel Co., which has a franchise in Houston and delivers to domestic consumers. The Houston Gulf Gas Co. delivers better than 25,000,000 feet per day. The local company gets its supply from the Houston Gulf Co.

Extensive enlargements are planned for the Houston Gulf Co. by the old and the new owners. A compressor station is now being installed at Markham to pump gas from that field. It is probable that the main line will be extended from the Refugio County gas field down into Duval and Webb Counties.

The Humble Oil & Refining Co.'s plant at Baytown, the Sinclair company's refinery, Galena Signal Oil, Crown Central Oil, Deepwater Refining Co. and the Keen & Woolf refineries are all now using natural gas under the stills and boilers. In addition so are many other industries, including the Texas-Gulf Sulphur Co. at Gulf, Matagorda County, and the Freeport Sulphur Co. at Freeport and Hoskins Mound, Brazoria County.

The Houston Gulf Gas Co. will extend its trunk line from the Refugio County Field to the White Point gas district across the bay from Corpus Christi. The extension will cost about $2,500,000.

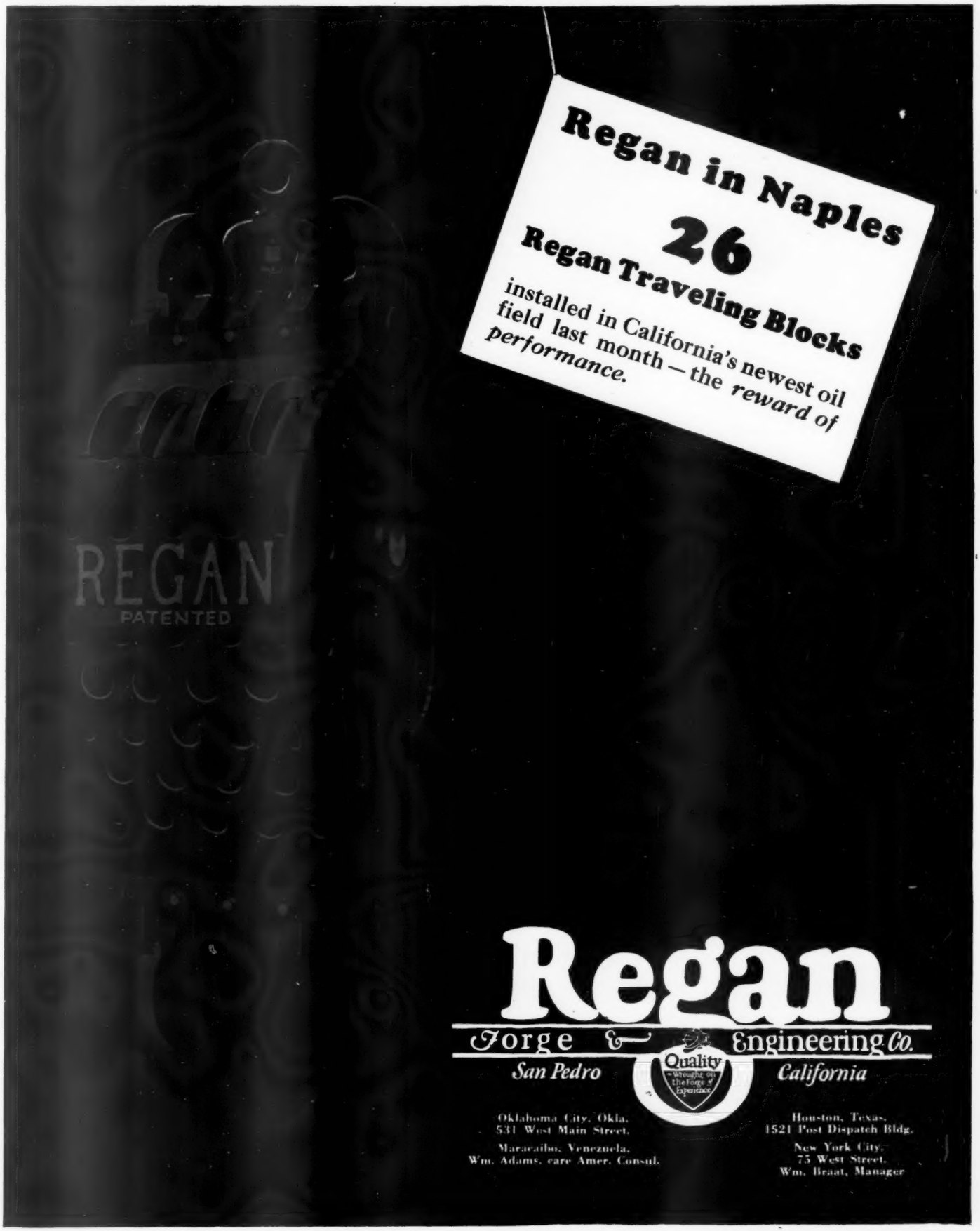
GOVERNOR MAY ORDER SUIT ON GAS EXPORT

OKLAHOMA CITY, Apr. 18.—Governor Johnston intimates he may direct the attorney-general to bring suit against gas and pipe companies piping gas outside of the State.

When Oklahoma became a state, three companies had a right to pipe outside of the State because they were doing business in territorial days and had vested rights which the State could not take away, the Supreme Court held in the case of Governor Haskell against the Kansas Natural Gas Co., and in the case of Attorney-General Charles West against the same company.

Governor Johnston was a member of the constitutional convention and helped frame the provision prohibiting gas companies from piping outside of the State. When Haskell became governor and tried to prevent companies from piping outside the State, he had Johnston as special counsel to take the evidence in the cases, which went to the Supreme Court of the United States.

LOOK FOR THE BIG RED BLOCK



Regan in Naples

26

Regan Traveling Blocks

installed in California's newest oil field last month — the *reward of performance.*

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Wm. Braat, Manager

EQUIPMENT AND SUPPLIES

ROTARY FISH TAIL BIT FOR ROTARY DRILLING

C. W. Herrin, of Kansas City, Mo., a rotary driller, has been granted a basic patent on a rotary drill bit and automatic elevator.

The mechanism is without springs or tension, the acting being forced action throughout, and its inventor claims 50 per cent more actual drilling time can be accomplished with the appliance. Among the advantages claimed for it by its inventor are that it is a labor and time saver because there is no pulling of pipe and that the change of bit can be made in the hole at any depth, without any change in the present drill pipe, tool joints or any other standardized rotary machinery. The steam, he says, can be restored to capacity while bit change is being made as it requires very little power to pull the new appliance as compared to pulling several thousand feet of drill pipe. The bit change can be made without closing down the pump. The elevator will clean the mud from the drill pipe and the chuck will shear gumbo from the bit, thereby insuring perfect circulation. The two major advantages claimed for it are: 1. Continuous circulation, and 2. Elimination of the pulling of the drill pipe.

To install the device it is only necessary to disconnect the present bit joint and attach the new one. In the operation of the bit, the drill pipe is raised 10 or 15 feet off the bottom, the automatic elevator is adjusted by rotating its bottom section until the compression lugs in the elevator are in a grab position.

NEW HEAVY-DUTY MODEL

The "Model D" Circular, issued by the Trackson Co., 511 Clinton Street, Milwaukee, Wis., describes in detail the new heavy-duty model Trackson Full-Crawler which is now in production. One page is devoted to the construction and mechanical features of the new machine, showing side, front, and rear views, and another page describes the various uses for which the Model D is designed. This circular and others describing the standard Trackson Full-Crawlers will be sent free on request.

TO COVER SOUTHWEST TEXAS

Marshall Moore has recently joined the sales staff of the Dunn Manufacturing Co., Oxnard, Calif., manufacturers of oil well tools and equipment. Mr. Moore formerly was connected with the sales staff of the Panhandle Refining Co., Wichita Falls, Tex., in the tank and steel department. He will cover southwest central Texas for his firm, and will make his home in Abilene.

REPORTS CAPACITY ORDERS

The Shaffer Tool Works, Brea, Calif., reports that export, Mid-Continent and California orders for casing heads, rotary jars, high pressure fittings and flowing devices are keeping the works busy at full capacity 24 hours a day. On January 1 the Shaffer Tool Works absorbed the plant of the Lee-Wilkinson Tool Co. at Santa Fe Springs.

NEW DISTRIBUTORS NAMED

The following new distributors have been appointed by the Novo Engine Co. Construction Equipment Co., Columbia, S. C., San Antonio Machine & Supply Co. San Antonio, Tex., branches at Corpus Christi, and Waco, Tex., H. E. Erickson Co., Inc., 114 South Third St., Minneapolis, Minn.

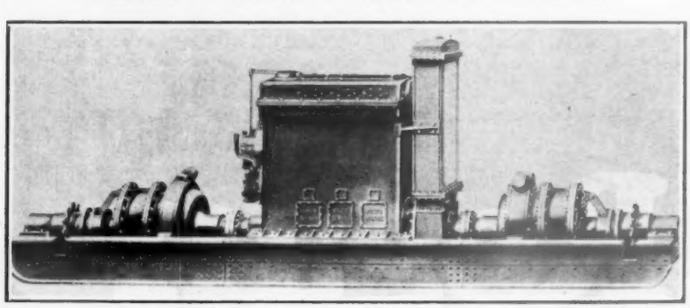
CHANGE IN REPRESENTATIVES

The Edwards Valve & Manufacturing Co. of Chicago, Ill. announces the following changes: H. J. Meier, 459 N. W. National Life Bldg., Minneapolis, Minn., is the new representative in the Minneapolis region, and E. W. Nicklin, 12-231 General Motors Bldg. Detroit, Mich., is the new representative in the Detroit territory.

SHIPMENT TO RUSSIA

The Safety Pulling Machine Co. of Independence, Kans., has just completed a shipment of five Eclipse deepwell pulling machines to Novorossisk, Russia. This shipment added to previous orders makes a total of 21 machines purchased by this company for use in the Russian oil fields.

DIESEL POWER IN PETROLENM DRILLING



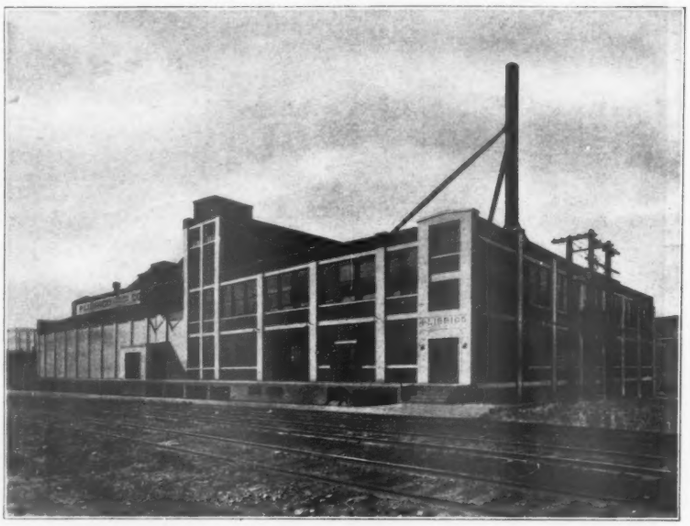
The pioneering of Diesel power has resulted in an appreciable saving in investment and the elimination of numerous obstacles, according to a report prepared by James Garvey of Los Angeles, who designed what is believed to be one of the first Diesel power units ever adapted to rotary drilling.

Among the results made possible by Diesel drilling, according to Mr. Garvey, have been a low fuel cost, the drilling of a straight hole, retarded depreciation, a flexible power application, which in use with a unique torque arrangement, relieves the drilling outfit of overload, and the elimination of certain stand-by losses.

Mr. Garvey states that over a year ago one of the world's largest oil companies installed the first Diesel power experimental outfit in the Redondo, Calif., field and successfully drilled a 3,500-foot well in 31 days, with a total fuel and lubricating cost of $98.60.

Convinced of the opportunity for developing Diesel power in oil fields, Mr. Garvey established the firm of Garvey & Palmer, Inc., of Los Angeles, and has adapted the G-P drilling unit to the Foos Diesel engine.

NEW PLANT OF PLIBRICO COMPANY



The new Chicago, Ill. plant of the Plibrico Jointless Firebrick Co. shown above is said to be the largest plant in the world devoted exclusively to the production of plastic furnace lining. The building also houses the executive offices of the company.

STEEL MOUNTED TRUCK TANK

The illustration shows the Butler steel mounted truck tank made by the Butler Manufacturing Co., of Kansas City,

Mo. The steel mounting is said to give extra strength, durability, and sturdiness to the truck which is being widely used by marketing and distributing agencies.

TRADE LITERATURE RECEIVED

From DeLaVergne Machine Co., New York City, two booklets entitled: "Nonstop 457 Day Run" and "What Diesel Engine Users Say." These booklets describe feats accomplished by the products of the DeLaVergne Co.

From Detroit Graphite Co., Detroit, Mich., two booklets entitled "Silvr-Cool" and "Rust, its Prevention." These booklets give intimate details of the application and use of "Silvr-Cool" which is an aluminum paint, and also explain methods by which rust may be prevented.

From the Novo Engine Co., Lansing, Mich., a folder showing the work performed by Novo power units on various public works.

From the Columbia Rope Co., Auburn, N. Y. the current number of the Columbia Crew.

From the Barnstead Still & Sterilizer Co., Boston, Mass., a new edition of the Barnstead distilled water handbook, which constitutes a survey of distilled water use.

From Fenwick-Reddaway Mfg. Co., Newark, N. J., a booklet and price list describing Iwana hair belting and its uses in various industries.

From the Chicago Bridge & Iron Works, the current number of the Water Tower.

CARBON ARC PROCESS BUTT WELDING MACHINE

Among the many types of welding equipment which have been brought out in recent months, the "Automatic" machines for electric arc welding are said to be the most interesting. It was only a few years ago that everyone was agreed that electric arc welding would forever remain a manual process in which the skill of the operator would be the limiting factor, yet in the last 12 months numerous new machines have appeared on the market for doing welding by machine which had formerly been done by hand.

The Lincoln butt welding machine is a further development of the machine-driven carbon arc to the problems of welding. One ordinarily thinks of butt welding in terms of the resistance welder. The arc butt welder is not an alternative method of doing butt welding but is claimed to be a solution to a class of butt welding problems which the resistance welder cannot solve.

TEXAS DISTRIBUTOR

Elms Specialty Co. of Wichita Falls, Tex., has been granted the exclusive distribution in North Texas of the Neco line of pumping eqiupment made by the Northrup Equipment Co. of Parkersburg, W. Va.

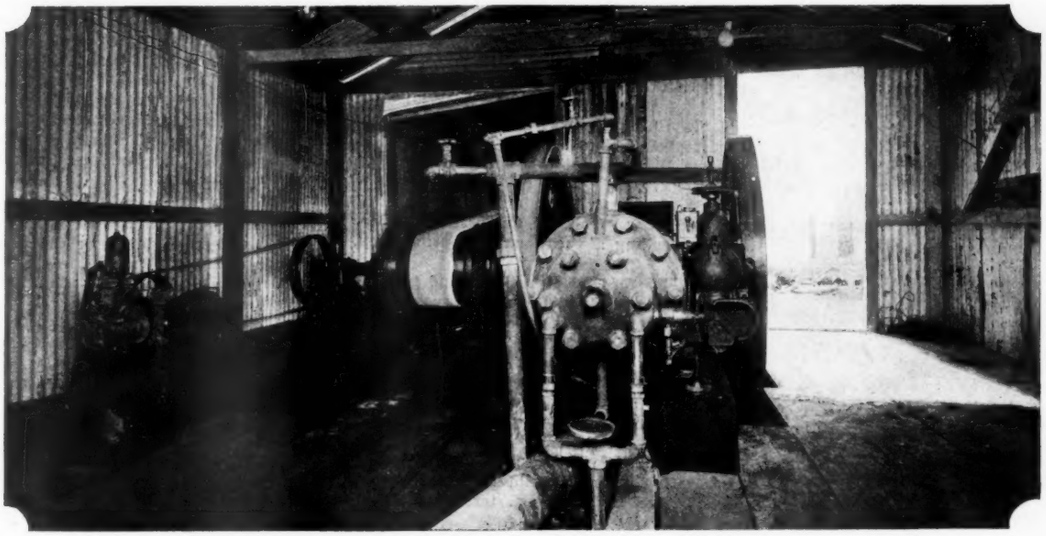
NEW FACTORY REPRESENTATIVE

W. R. Ladewig, 238 San Pedro Street, Los Angeles, Cal. has been appointed exclusive factory representative in southern California of the Homestead Valve Co. of Homestead, Pa.

OPEN TULSA OFFICE

Wailes Dove-Hermiston Corp., 17 Battery Place, New York, manufacturer of Bitumastic enamel pipe coatings for oil and natural gas lines, has opened an office in Tulsa, at No. 1 North Frankfort Street. In addition to an office, a warehouse has been established at the same address, both in charge of W. H. T. Thornhill, Mid-Continent manager for Wailes Dove-Hermiston Corp.

ting the Mustard"



Here's the Franklin Oil Drilling Engine on Shirk Lease Well No. 1 of the Wentz Oil Corporation at McCamey, Texas.

"She Sure is cutting the Mustard," said D. P. Fitzsimmons, District Superintendent of the Wentz Oil Corporation, about this Franklin Valveless Gas Engine.

Those are the kind of expressions of approval we hear every day from the men who use this really remarkable engine. No matter where your well is, you can put a Franklin Oil or Gas Engine on the job (one truck will move it) with the knowledge that it will do its job, day in and day out with nothing but the most casual attention. Repairs are practically unknown and its economy on water and fuel are astounding.

FRANKLIN VALVELESS ENGINE COMPANY

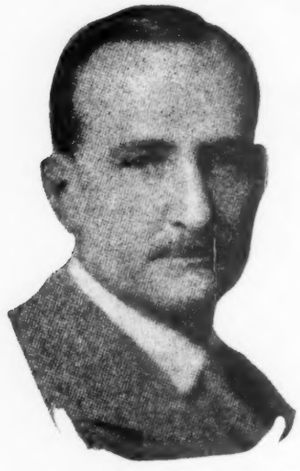
FRANKLIN, PENNA.

Oil Well Supply Company

Sole Distributors

LESS ENGINES

MEN KNOWN IN OILDOM



M. E. Lombardi

The board of directors of the Standard Oil Company of California recently elected M. E. Lombardi, assistant general manager of the producing department of the company, a director, succeeding F. H. Hillman, Vice President and Director, who is retiring from active service.

Mr. Lombardi joined the Standard Oil Company of California at the time of the consolidation with the Pacific Oil Company last year. He was vice president and general manager of the Pacific Oil Company. He was born in Houston, Texas, in 1878 and was graduated from Yale in 1900, after which he took a special course in mining engineering in the University of California. Thereafter he joined, as an engineer and geologist, the Karn Trading & Oil Company, a subsidiary of the Southern Pacific, continuing with that organization until the formation of the Pacific Oil Company, which was organized to operate the oil properties of the Southern Pacific Company in 1921. He was at that time made assistant general manager. He is president of the Associated Pipe Line Company.

PERSONAL PARAGRAPHS

Lou Gould Sheddan, of Van Nuys, Calif., has opened offices in Luling, Tex.

* * *

Mrs. Frank Yerkes, of Trinidad, British West Indies, is spending a few months at Petrolia, Ontario.

* * *

F. J. Moore, of Tulsa, of Hughes & Company, was a visitor in Shreveport, La., during the week.

* * *

J. A. Vickers, of the Vickers Petroleum Company of Wichita, Kans., spent a few days in Tulsa, Okla., last week.

* * *

Joseph R. McGraw, of the Marland Oil Company of Texas, is convalescing after an operation in a Chicago hospital.

* * *

R. N. Lambert, Tulsa, Okla., marketer of petroleum products, called on the trade at Shreveport, La., the past week.

* * *

Dr. E. Jablonski, a native of Poland, joined the Vacuum Oil Company's geological staff in Eastland, Tex., about a month ago.

* * *

Charles T. Davis, representing the Dresser Manufacturing Company of Bradford, Pa., was a recent Houston, Tex., business visitor.

* * *

W. T. Elliott, of the Acme Fishing Tool Company, Parkersburg, W. Va., is making an extended business visit to the Mid-Continent fields, calling upon the trade and renewing old acquaintanceships.

John Mouser, head of the Prairie Oil & Gas Company's Eastland, Tex., office, is back at his desk after a light attack of tonsilitis.

* * *

W. F. Smith, of the Empire Pump Company, of Los Angeles, Calif., spent the past week in Shreveport, La., and neighboring oil fields.

* * *

H. D. Durnell, Texas representative of the Union Machine Company, Bartlesville, Okla., made a recent trip to the company's home office.

* * *

J. Edgar Pew, vice president of the Sun Oil Company, has returned to Dallas, Tex., after an inspection trip to the Venezuela fields.

* * *

J. L. Burns, formerly of Smackover, Ark., has been transferred to Borger, Tex., as local manager for the Williamsport Wire Rope Company.

* * *

J. W. Bradbury, assistant to the general agent of the Mexican Gulf Oil Company, Tampico, Mexico, is spending a vacation in Houston, Tex.

* * *

F. W. Burford, vice president and general manager of the Crystal Oil Refining Corporation, is back at his desk after a business trip to Tulsa, Okla.

* * *

Allen D. Hunter, scout for the Humble Oil & Refining Company, has been transferred from the Shreveport, La., district, to the Wichita Falls, Tex., district.

* * *

Ben M. Bell, vice president of the Pandem Oil Corporation, with offices at Dallas, Tex., has lately been in the Laredo, Tex., territory, looking over the field.

* * *

Alexander Johnson, superintendent of the Ohio Oil Company, at Findlay, Ohio, spent several days in the Saginaw, Mich., Field in the interest of his company.

* * *

W. F. Kennedy, leaser and operator in the Gulf Coast region, has gone to Alexandria to look over the prospective saline domes in central and north Louisiana.

* * *

Max Burleigh has been transferred from the Amarillo, Tex., land office of the California Company, to Colorado, Tex., and has been succeeded by C. A. Mix.

* * *

S. Ray Jordan, of the R. V. Aycock Company, Dallas, Tex., was in Wichita Falls, Tex., recently calling on the trade and from there he went to the Panhandle fields.

* * *

Forrest M. Towl, New York, president of the Southern Group of Pipe Lines, and Mrs. Towl are contemplating a visit to Europe. They expect to be gone several months.

* * *

L. H. Thawley, formerly with the Roxana Petroleum Corporation in the Okmulgee, Okla., district, is now with Pete Wiggins in the Peerless Royalty Company, of Tulsa, Okla.

* * *

B. B. B. Bickerstaff, scout and lease man for the Gulf Production Company in the Eastland, Tex., district, was married March 31, to Miss Vera Jean McNew, of Mineral Wells.

* * *

J. E. Ring, of the Panhandle land department for the Skelly Oil Company, has returned to Amarillo, Tex., following a business trip to the company's home office at Tulsa, Okla.

* * *

Michael Foley, general manager of the Casper, Wyo., division and J. J. Flannigan, field superintendent of the Continental Oil Company, have been spending a week in the Montana oil fields.

* * *

R. V. Hanrahan, president of the Humble Pipe Line Company, Houston, Tex., headquarters, has gone to the Panhandle section to inspect the progress of the work on the line the company is laying.

* * *

Harry Potts, of the Kerotest Manufacturing Company, of Pittsburgh, Pa., stopped in Houston, Tex., en route east from Los Angeles, Calif., to visit Frank Carrothers, local agent for the Kerotest company.

Captain Stewart, U. S. N., who is in charge of the Teapot Dome for the Navy Department, has been in Casper, Wyo., looking after affairs connected with the field operations in Teapot.

* * *

Vice President John McFadyen, of the Ohio Oil Company, who is also manager of the Rocky Mountain division of the firm, is in Mexico, looking over the holdings of the Ohio Oil Company there.

* * *

K. C. Jones, Shreveport, La., oil operator, has been appointed supervising agent of the Louisiana conservation department for the southern part of the State with headquarters at Lake Charles.

* * *

Ernest L. Gariepy, a staff member of the Skelly Oil Company, geological department and working in the Texas Panhandle territory, has resigned to enter Leland Stanford University in California.

* * *

C. M. Bennett, first vice president of the Louisiana Oil Refining Corporation of Shreveport, La., returned to his desk the past week after an absence of two months in the British West Indies.

* * *

L. B. Denning, president of the Lone Star Gas Company, has moved from Pittsburgh, Pa., to Dallas, Tex. The transfer of the executive offices from the East was because of the press of increasing business.

* * *

M. J. Adams, superintendent of the gasoline and gas department for The Texas Company in the north central Texas division, has been transferred to Wichita Falls, Tex., from Electra, where he was for the past year.

* * *

Roy E. Carter, of the Continental Oil Company, with headquarters in Wichita Falls, Tex., was recently elected fire and police commissioner of Wichita Falls. He will retain his position with the Continental company.

* * *

John W. Clark, geologist for the Amerada Petroleum Corporation, has been transferred to the Fort Worth, Tex., office from Cisco, Tex., and P. O. Holland has been transferred to the Cisco office from Fort Worth.

* * *

Dr. Ricardo Valverdi, Minister of Mines and Petroleum for the Peruvian Government, has been making a tour of the Mid-Continent oil fields studying producing conditions for his government and will soon return to his home at Lima, Peru.

* * *

L. W. Leonard, of the Leonard Exploration Company of Pittsburgh, Pa., has been visiting San Antonio, Tex., with D. E. O'Brein, who represents the Leonard interests in Texas, and has been looking over the company's holdings. Accompanied by Mr. O'Brien he made a trip to Beaumont, Tex.

* * *

Carles Ostrander, formerly assistant manager of the Richfield Oil Company at San Bernardino, Calif., has just been appointed district manager of the same company at Tulare. He succeeds A. E. Patton, who has resigned. Mr. Ostrander has been with the Richfield for the past four years.

* * *

J. M. George, who has just returned from four years in Poland with the Vacuum Oil Company, has been placed in charge of the company's production department in north Texas with headquarters at Eastland. He is now making a tour of all the west Texas fields and is also including in his itinerary the New Mexico oil areas and the Panhandle of Texas. J. R. B. Moore, assistant manager of the land department, with headquarters at Houston, Tex., is accompanying Mr. George on this trip. They expect to be gone about 10 days.

* * *

The production superintendents of the Humble Oil & Refining Company held a three-day conference at the general offices in Houston, Tex., recently. John R. Suman, vice president in charge of production outside of the Gulf Coast division, presided. Those attending were: M. B. Manning, of the Gulf Coast division; Bert Broday, Wichita Falls, Tex.; David Frame, Amarillo, Tex.; R. W. Richmond, Corsicana, Tex.; W. W. Wallace, Cisco, Tex.; B. N. Wisely, San Angelo, Tex.; D. B. Harris, Shreveport, La., and C. B. Goddard, Ardmore, Okla.

NAVY ASKING FUEL OIL SUPPLY FOR ROYALTY CRUDE AND GASOLINE

WASHINGTON, D. C., Apr. 16.—Proposals for supplying the Navy with fuel oil to fill the Navy tanks at Pearl Harbor, Hawaii, were advertised by the Navy Department on April 4. The bidders will be called upon to make delivery in a quantity sufficient to fill the tanks by January 1, 1929. The Department offers in payment royalty oil and gasoline obtained from Naval Oil Reserves, No. 1 and No. 2 Elk Hills, California, recently returned to the jurisdiction of the Navy by executive order.

The bids also call for delivery of 300,000 bbls. per year over five years. Alternate bids will be permitted, one that the fuel oil, either of the bunker or Diesel type, be furnished at the tidewater point in California specified by the bidder, or that sufficient fuel oil shall be delivered into the Navy tanks at Pearl Harbor, Hawaii, by January 1, 1929, to fill them. The proposal specifies that the Navy "desires to make the award" on the latter bid, known as "Bid B."

The Pearl Harbor tanks were built by E. L. Doheny for the United States Navy, in partial payment for its leases on the Elk Hills, California, oil reserves which subsequently were declared illegal and turned back to the Government. The Supreme Court of the United States recently ruled that despite the return of the oil leases to the Government, the tanks also remained governmental property.

Proposals Published

The proposal published by the Department points out that the 21 oil wells in Reserve No. 1 will be shut in for an indefinite period, and that a partial shutdown of some of the Pan American Petroleum Co. leases on Reserve No. 1 also has occurred. With these "shut ins" so far as can now be foreseen the production may average 200,000 bbls. of crude oil per month.

The call for bids stated that the Government "does not guarantee the quantity of crude oil and gas products that will be produced in the future from Naval Petroleum Reserves Nos. 1 and 2." It, however, quoted a statement of approximate production of crude oil and gas products that accrued to the receivers of the reserves during January, 1927, "and indicates approximately the probable production immediately after termination of the receivership, without any of the production being shut in." This statement showed that 358,000 bbls. of crude oil were procured from Reserve No. 1, and No. 2. Also produced from these two reserves in January were 491,000,000 feet of gas, and 270,000 gallons of gasoline.

The contract will be awarded to the bidder "who agrees to deliver to the Navy the greatest number of barrels of fuel oil of the respective specified kinds, at the respective required points of delivery, in exchange for the fixed quantities of crude oil, gas and gasoline." Deliveries of the crude oil and gas products to the contractor by the Navy, will begin on the termination of the present receivership under the District Court of the United States for the Southern District of California, expected to occur in the latter part of April.

Terms of Contract

The proposal specifies that bids are invited by the Navy on two bases, as follows:

Bid A. Complete delivery of the fuel oil specified shall be made into barge, tanker or other vessel at the tidewater point in California specified by the bidder.

Bid B. Sufficient fuel oil shall be delivered into the Navy tanks at Pearl Harbor, Hawaii, by January 1, 1929, to fill them, and thereafter to make deliveries at Pearl Harbor at the rate of not exceeding approximately 300,000 bbls. per year during the remainder of the life of this contract; the balance shall be delivered into barge, tankers, or other vessels at the specified tidewater point in California.

It is estimated by the Navy that the deliveries of crude oil, gas and gasoline to be delivered by the Navy to the successful bidder for the five-year period of the control, would amount to 18,000,000 bbls. of crude oil; 10,000,000 feet of gas not artificially compressed, 5,000,000 gallons of gasoline, and no estimate for gas artificially compressed. The production of 18,000,000 bbls. of crude oil is based on the assumption that the production "falling under this contract will average 200,000 bbls. per month."

May Run 10 Years

Another stipulation in the contract permits the contract for the exchange of oil to run for 10 years in the event the actual production delivered to the contractor during the five-year period is less than the "proposal sum" production. This clause follows:

In case the actual production delivered to the contractor during the five-year period is less than the "proposal sum" production, it is understood and agreed that the contractor shall continue to take additional deliveries of crude oil, and gas products, for which he will continue to exchange fuel oil to be delivered to the Navy, without any change in the contract conditions, until the "proposal sum" production, as a whole, has been delivered to the contractor; provided that in any case, this contract shall automatically terminate 10 years after it begins to run, regardless of the amount of production turned over to the contractor, and without any claim on his part arising out of any differences that may exist at the end of the 10-year period between the production delivered to him and the quantities on which his bid is based. The crude oil, gas, and gasoline from the field, and the movement of the bunker fuel oil and Diesel fuel oil, respectively, into the Pearl harbor tanks, in the event Bid B is accepted, shall be charged to the Government.

HIRED FOR 3 WEEKS, REMAINED 48 YEARS

The recent retirement of Fred H. Hillman, vice president of the Standrad Oil Co. of California after 48 years service, recalls an incident at the Fort Worth meeting of the American Petroleum Institute in 1924.

Coming down in an elevator in the Texas Hotel he met an old acquaintance of his Bradford days.

"Have you seen Billy Splane?" he asked, when, the greetings were over. "I have a good joke on Billy. He hired me for three weeks 45 years ago when he was superintendent of telegraph for the National Transit Co. in Bradford. He forgot to fire me and I have been working for the company (the Standard) ever since."

The old Standard did not "fire" young men of the Fred Hillman type. On the contrary, the company advanced them, and Hillman went up the Standard ladder from one important job to another until he reached the vice presidency of the largest single producer of oil in the world, the Standard of California, and there he did good service for years until the age limit was reached. He began with a company that developed some very good oil men. Such men as George Coyle, director and general superintendent of the Prairie Pipe Line Co.; John M[illegible] president of the Sinclair Pipe Line Co.; Martin Moran, president of the Texas Pipe Line Co. of Oklahoma; Charles Schumacher, late president of the Crescent Pipe Line Co.; Ralph V. Hanrahan, president of the Humble Pipe Line Co.; T. J. Donoghue, vice president of The Texas Company; Joseph E. Ge[illegible]r, vice president and general manager of the Cumberland Pipe Line Co.; are only a few of the good ones who graduated at one period or another from the same school in which Mr. Hillman learned his first lessons in oil.

PAGE-ARMCO PROCESSED Welding Wire and Electrodes

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To assure perfect results all Page Welding Wire and Electrodes are carefully treated and drawn especially for the type of work for which they are recommended. They are always uniform.

SHOP TESTED

In addition each type of Page Welding Wire is shop tested at frequent intervals under actual shop conditions to insure its high welding qualities.

PLAINLY MARKED

Each wire and rod is plainly stamped with the name and type of wire to eliminate guess work.

NATIONAL SERVICE

Complete stocks are maintained at all central points and users receive the promptest kind of delivery service.

Prove Page superiority right in your own shop. Write for samples and interesting literature.

PAGE STEEL and WIRE COMPANY
An Associate Company of the American Chain Co., Inc., Bridgeport, Connecticut
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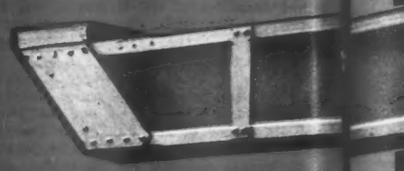
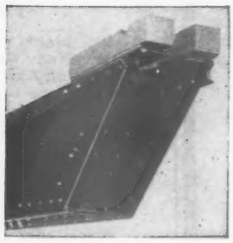
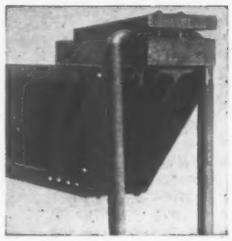
STEEL AND WIRE PAGE QUALITY PRODUCTS

ARMCO

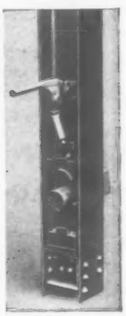
The illustration below shows the application of Page Processed Welding Wire to the welding of the Houston Pipe Line in Texas. Another case of where only the BEST will do.

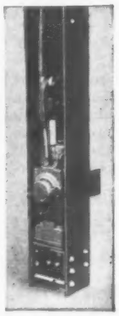






Both ends of the walking beam are heavily reinforced. On the nose, side plates are riveted to the flanges of the top and bottom reinforcing channels and through a channel separator to the web of the I beam. A heavy steel reinforcing plate is placed on the top flange just under the temper screw.





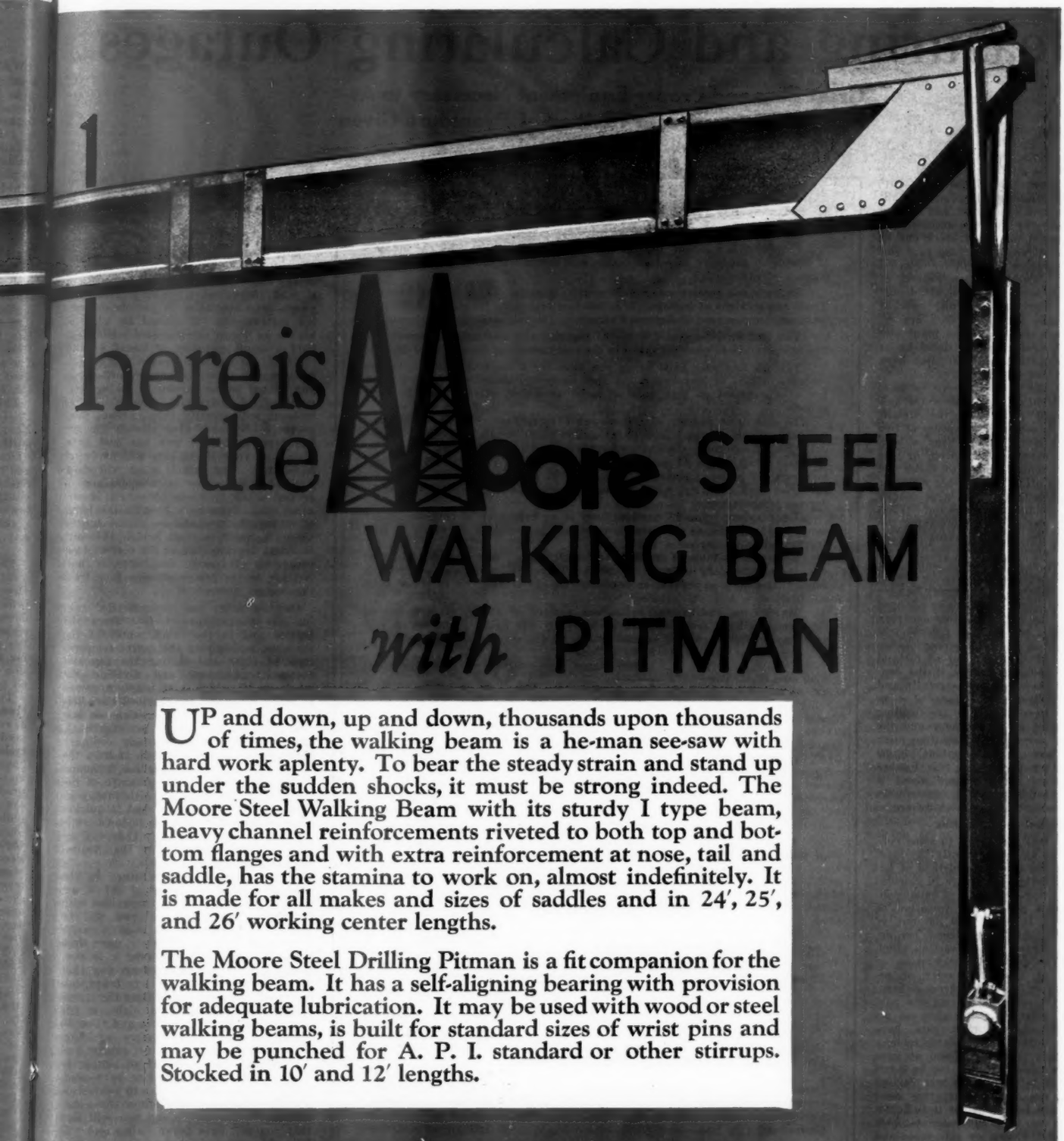
Self-aligning bearing is opened or locked in closed position by a lever. A toggle action prevents the bearing from opening without a direct pull on the lever. A double oil pocket provides for lubrication. Patent applied for.

Other Moore Products

Steel Derricks **Steel Tug Rims**
Steel Bull, Band and Calf Wheels
Crumley Pumping Rig Units
All Steel Drilling Rigs
Crumley Pumping Pitmans
Crown Blocks

World Wide Service for Twenty Years

Moore ALL STEEL RIG EQUIPMENT



here is the Moore STEEL WALKING BEAM *with* PITMAN

UP and down, up and down, thousands upon thousands of times, the walking beam is a he-man see-saw with hard work aplenty. To bear the steady strain and stand up under the sudden shocks, it must be strong indeed. The Moore Steel Walking Beam with its sturdy I type beam, heavy channel reinforcements riveted to both top and bottom flanges and with extra reinforcement at nose, tail and saddle, has the stamina to work on, almost indefinitely. It is made for all makes and sizes of saddles and in 24′, 25′, and 26′ working center lengths.

The Moore Steel Drilling Pitman is a fit companion for the walking beam. It has a self-aligning bearing with provision for adequate lubrication. It may be used with wood or steel walking beams, is built for standard sizes of wrist pins and may be punched for A. P. I. standard or other stirrups. Stocked in 10′ and 12′ lengths.

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Measuring and Calculating Outages

Great Care and Proper Equipment Necessary to Assure Accuracy. Proper Method of Procedure Given

By John Stumpf*
Henry H. Cross Co., Chicago

I do not know that this matter of outages has ever been the subject of any talk at any oil jobbers convention, but I know of no reason why refiners and carload marketers should not want every one of you to know all about checking cars and I don't believe there is any desire to avoid this subject. Every modern refiner, of course, makes every effort to avoid outage claims. Cars are carefully checked and in 9 cases out of 10 they are rechecked before they leave the plant and most loading records are initialed by at least two men, to show that they have been checked and are correct.

Outage claims are expensive to handle. In addition to the value of the gallonage charged back with the freight added, there is usually the expense of two telegrams or more and perhaps a long distance telephone conversation or the expense of sending a man to check the car, which is often done in big cities or where the claim seems to be large enough to warrant sending an inspector. Then there is the clerical work, involving the checking of the claim, making out of credit memorandum, posting the item on the books and so on. Nobody wants outages on any cars he ships, be he refiner or carload marketer. So you may be sure there are no cars intentionally shipped short out of any refinery. More accuracy in loading cars has led to a reduction of outage claims so that the average today seems to be about 1 car out of 50 and this can be reduced further if the consignee knows how to check carefully and correctly. Extreme variations of temperature between the time the loading record is taken at the refinery and the time the car arrives at destination seem to be the cause of more outage claims than any other factor and this further bears out what we have said about it not being possible to check cars closely enough, no matter how careful we are.

Method of Calculating

A further fact that leads to some confusion is that up until recently the loaders of cars used their own method of figuring, the principal difference in calculation being in the coefficient of expansion, on contraction per degree variation of temperature. It might not be out of place to say that by coefficient per degree we mean that figure or fraction which represents the amount of expansion or contraction of a given gravity of petroleum above or below 60 degrees Fahrenheit, which is normal. During the past year or so most of the leaders of petroleum products in tank cars have adopted the Bureau of Standards table, a copy of which you have found at your place at the table. This is the best and most accurate table that has been devised for general use and the fact that most of the refiners have adopted it indicates that this is so. The difference between the coefficients shown on this table and those used by others who have not adopted it is so small as to amount to only one gallon or so on the ordinary outage of 50 or 60 gallons, so it is safe to assume that any refiner or marketer will accept outage claims based on this table.

Proceeding further, never forget in taking outage measurements and temperature of contents of cars, that you are engaged in a difficult task and that if you find a car short you are questioning the accuracy of the men who loaded it and you must try to be as careful as they were.

First, in taking the outage of any car, do not think that you or any of your men are acrobatic enough to lean over the rim or a dome with your feet in the air, practically standing on your head and measure with an ordinary rule the correct outage on a car. It can't be done for several reasons. First, there is a bulge or curve at the point where the dome of the car is riveted to the shell and you cannot determine the shell level unless you use a straight edge stick at least three-quarters of an inch square and 5 feet long, attached to a string or cord of sufficient length to enable you to properly place it lengthwise of the center of the car and hold it in place. There are outage gauges made for this purpose which, of course, are best adapted for this work and can be obtained from several sources, which you will find advertised in your petroleum papers. Get one, but if you need one in the meantime make a stick such as described and measure from the top edge of this stick, when held as described, to the surface of the contents, being sure the stick is held tightly against the shell of the car. Take these measurements in the center of the dome and also at the outside edges. If there is a difference between the measurements the car is not standing on a level track and the two outside measurements should be added together and divided by two to get the correct outage. If you haven't a level unloading track or one that is nearly level you are losing more by shipping back a few gallons in each car.

Average Temperatures

It is next to impossible to get the correct average temperature of the contents of any car. You must by all means have a good thermometer. Get it from the people who specialize in petroleum testing instruments. It should be what is known as a cup thermometer which will hold a small quantity of liquid around the bulb. It has been proven many times by comparing temperature records that you cannot be too careful in taking temperature of petroleum products. Petroleum will stratify into various temperature divisions; even though the car has been in transit and has just been placed on your siding this will be found to be true. One part of a car will show a marked difference in temperature to several other divisions or strata in the same car. Some have been in the habit of taking the temperature at the top of the car, about a foot under the surface and figuring that as the correct temperature. It most decidedly is not. Neither is the temperature a foot from the bottom correct.

One authority has recommended taking the temperature 1 foot from the bottom and in the exact center of the contents, multiplying the center temperature by eight and adding the top and bottom temperature and dividing the whole by 10, which is as nearly accurate as anyone can get it, provided the thermometer is left in each position not less than 3 minutes and preferably 5. However, in drawing out any ordinary thermometer from the bottom or from the center of any car the reading is bound to be affected by the temperature of the contents at the top, so withdraw your thermometer rapidly and read it quickly after withdrawal and write it down while you are on the car. Don't depend on your memory. The fellow that loaded the car didn't depend on his

If you take the temperature in the exact center of the car and get it accurately you will find on comparison with the other mentioned that you will be very close to correct, so as it is easier to take temperature accurate once than it is to take it three times, it is suggested in the example before you that the center temperature only be taken, but as stated, the method of adding the center temperature multiplied by eight, to the top and bottom temperature and then dividing by ten, will be more accurate. This method of taking the outage and temperature doesn't sound so simple as the methods that most of us have used, but if you would do justice to yourselves and the shippers, kindly follow these suggestions in the future and you will find that you will have fewer claims and will have the peace of mind of knowing that you are getting what you are charged with.

Points to Remember

Remember the following:

1. Check each car immediately after it is placed on your track. Don't allow it to stand a day or two and throw the liability of demurrage on the shipper while you wait for authority to unload.

2. Examine all cars carefully for signs of leakage or tampering with outlet or dome, indicating the car was opened before you received it. If there are such signs call your railroad agent or his representative and have proper notations made on original expense bill. Whether such notations are made or not,

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FIGURING TANK CAR OUTAGES

Following is a simple and accurate method of figuring tank car outages of petroleum products, based on outage and coefficient tables adopted by the Bureau of Standards:

Suppose you receive a car of 60 gravity gasoline. It is properly sealed. There are no signs of leakage. It is invoiced to you as "shell full 8,100 gallons, net, temperature 60 degrees Fahrenheit (no temperature adjustment).

You find an outage of 1½ inches (careful and accurate measurement). The temperature of contents taken in the exact center of the car is 78 degrees.

The one and only fixed figure you have for a basis of determining the contents of this or any car is the shell capacity, shown on every invoice and also stenciled on both ends of each car which, in this case, is 8,100 gallons.

To determine number of gallons out (1½ inches): The attached outage table shows outage 1 inch (8,000-gallon cars) equals 20 gallons; 2-inch out equals 53 gallons. Difference between 1 inch and 2 inches 33 gallons. One-half of 33 equals 17 gallons. Therefore, 1 inch (20 gallons) and one-half-inch (17 gallons) makes actual outage 37 gallons. Deducting this outage from shell capacity, 8,100 minus 37, leaves 8,063 gallons in car at 78 degrees temperature.

Temperature being 78 degrees, there is an expansion of contents of car equal to 18 degrees, as the normal or average temperature on which all cars are figured is 60 degrees.

Referring to table of coefficients for 60 gravity material, we find that one degree variation is equal to .0006. Therefore, coefficient or fraction representing total expansion on contents this car is equal to 18 times .0006 or .0108.

Multiplying the number of gallons arrived at above, after deducting the outage, which were found to be 8,063, by our figure .0108, which represents the total amount of expansion over 60 degrees, as follows:

8,063 gallons
.0108 (figure representing 18-degree expansion)

6.4504
80.630

87.0804

87.0804, we find the total expansion is 87 gallons

Deducting this expansion from the actual number of gallons contained in the car at 78 degrees temperature, we find:

8,063 gallons
Less 87 gallons expansion

Net 7,976 gallons at 60 degrees temperature.

As you are invoiced for 8,100 gallons, net, you find there is a shortage of 124 gallons, thus:

8,100 gallons invoiced
7,976 gallons in car at 60 degrees temperature

Short 124 gallons

Temperature Adjustment

The following table adopted by the Bureau of Standards shows the coefficient of expansion for each degree above or below the normal temperature of 60 degrees Fahrenheit for oils of various gravities which may be of some value to you in figuring the temperature adjustments on invoices:

Grade—	Range of Group Degrees A P.I. at 60 Fahrenheit	Coefficient of Expansion at 60 Fahrenheit
Crude, road oil, flux, lubricating oil, gas oil, etc	Up to 34.9	0.0004
Crude, gas oil or fuel oil, lubricating oil, kerosene, etc.	35 to 50.9	0.0005
Gasoline	51 to 63.9	0.0006
Gasoline, casinghead, etc.	64 to 78.9	0.0007
Casinghead	79 to 88.9	0.0008
Casinghead	89 and higher	0.00085

*Paper presented at American Oil Men's Association's meeting, Chicago, April 14.

ROCKY MOUNTAIN AREA

(Continued from Page 64)

at Boulder, under the direction of Professor George and the government men.

Runs From the Fields

Salt Creek	39,960
Teapot	420
Big Muddy	2,810
Grass Creek	2,850
Elk Basin	980
Greybull	25
Rock River	1,980
Rex Lake	190
Lance Creek	780
LaBarge	240
Poison Spider	170
Osage	360
Hamilton Dome	1,080
Lander	150
Byron	60
Lost Soldier	3,660
Ferris	80
Simpson Ridge	30
Cat Creek	2,370
Lake Basin	190
Sunburst	12,000
Florence	700
Moffat	2,200
Fort Collins	3,515
Tow Creek	670
Boulder	25
Rangeley	100
Walden	90
Hogback	760
Rattlesnake	535
Table Mesa	235
Artesia	1,950
Total	81,165

LA.-ARK. WILDCATS

(Continued from Page 57)

chalk at 1,324 feet in No. 1 Cobbie Hardaman, Section 9-7-7w. Lawson & Pharris are coring at 2,542 feet in No. 1 Clark Morse L. Co., Section 23-5-6. Salt water showed in cores taken from 2,530-40 feet. Ohio Oil Co. is drilling at 1,000 feet in No. 1 Thomas, Section 23-13-6w. H. O. Readheimer is making arrangements to deepen No. 1 Wafer, Section 3-11-8. This test was dry at 1,515 feet and at 1,523 feet. Tunica Petroleum Co. is drilling lime at 2,555 feet in No. 24 L. & A., Section 35-13-6w.

Rapides Parish

Minnesota Oil Corp. has resumed operations in No. 1 Wettermack, Section 7-5-3w. It has cemented 8¼-inch casing at 1,720 feet. This test has been shut down since early in March waiting on casing.

Red River Parish

A wildcat producer making 90 bbls. of oil daily was an important development in Red River Parish. This was Magnolia Petroleum Co.'s No. 24 Polly, Section 6-12-10. It was completed in sand at 2,810 feet. The Amerada Petroleum Co. abandoned as dry at 3,001 feet No. 1 Long Bell, Section 5-13-9. Gulf Refining Co.'s No. 23 Kennedy, Section 24-13-11, is drilling in gumbo at 2,010 feet. No. 37 Robinson, in Section 25, is being bailed for a test of the sand at 2,561 feet. Phillips Petroleum Co.'s No. 1 Long Bell, Section 16-12-8, is in a sandy lime at 2,610 feet.

Richland Parish

Another gas well was given Richland Parish in S. D. Hunter's No. 1 McCoy, Section 29-16-6e, which was completed at 2,427 feet making an estimated 10,500,000 feet of gas. Gulf Refining Co. has bailed the 6-inch casing dry at 2,310 feet in No. 2 Rhymes, Section 5. In Section 11-16-5e, the 10-inch casing has been cemented at 900 feet in the same company's No. 2 Seibert. No. 1 Wayne Lumber & Timber Co., Section 36-17-5e, is in a limey shale at 2,840 feet. Louisiana Petroleum Co.'s No. 1 Binion & Sartor, Section 22-17-6e, has been shut in. This test started to come in from sand at 2,474 feet. Ruston Drilling Co. is at 800 feet in No. 1 Earle, Section 5-16-6e. Standard Drilling Co. is at 200 feet in No. 1 Delta Hardwood, Section 22-16-7e. Stovall Drilling Co. has cemented 6-inch casing at 2,310 feet in No. 1 Mitchell, Section 20-17-6e. Texas-Louisiana Carbon Co.'s No. 1 Broughton, Section 1-15-6e, is being reamed down to the bottom of the hole at 2,472 feet.

Sabine Parish

Arkansas Fuel Oil Corp. set the liner to test No. 3 Logan Oil Co., Section 33-10-12. It is in sand at 3,199-3,213 feet after drilling the 6⅝-inch plug at 3,105 feet. The casing was bailed at 3,165 feet in No. 4 Logan, which made two small heads of about 16 bbls. The liner is being bailed in No. 5 Logan, Section 28. There is 14 feet of sand in this test with the total depth at 3,204 feet. Beckman & Freeman have set 6-inch casing at 3,101 feet in No. 1 Logan, Section 26, with the total depth at 3,107 feet. L. M. Emlet's No. 7 Bowman, Section 14-7-14, is milling on the bit with the total depth at 2,623 feet. Magnolia Petroleum Co. is fishing for the drill stem in No. 1 La. L. L. L. Co., Section 11-6-11. This hole is at 3,268 feet. Lewis Clark Petroleum Co. is drilling No. 1 Wyatt Lumber Co., Section 23-5-12, at 3,710 feet. It has been shut down since early in March. Moffett and associates' No. 1 Moore, Section 5-9-12, is in lime at 2,748 feet. Woodley Petroleum Co. is rigging up for a test at No. 1 Robinson, Section 33-10-12.

Winn Parish

Ohio Oil Co. has junked and abandoned No. 2 Edenborn, Section 4-12-1w. The casing collapsed with the hole at 4,457 feet. Greer & Gault started drilling in No. 2 Bodcau, Section 9-11-4w, but has shut down at 18 feet. Humble Oil & Refining Co. has a location for No. 21 L. & A., Section 28-10-2w. H. L. Hunt has set 12½-inch casing at 100 feet in No. 1 Tremont, Section 27-10-1w. M. M. Roark has shut down at No. 1 Southern Minerals Co., Section 19-11-3w. Standard Oil Co. has a fishing job in No. 1 Tremont, Section 1-12-2w. Total depth of the hole is 3,745 feet.

ARKANSAS

Union County

Superior Oil Co. has abandoned No. 2 Cordell, Section 5-18-13. It found salt water at 3,002 feet. This test is in the Lawson-Urbana district. Garrett Modisette Drilling Co. is fishing for a bit and drill collar in No. 1 Union Saw Mill Co., Section 7-18-13, with the hole at 3,730 feet. Lion Oil & Refining Co. has a location for No. 1 Murphy Land Co., Section 23-18-18. Lyell and associates have a derrick up for No. 1 Stegall, Section 11-17-13. Marine Oil Co. has cemented a short string of 6-inch casing at 2,659 feet in No. 2-A Thompson, Section 10-18-13. No. 1-B Winn estate, same section, is drilling at 2,768 feet. Ohio Oil Co. has recemented the bottom of the hole to cut off salt water found at 3,614 feet in No. 1 Crain, Section 1-17-14. Rovenger Oil Co. has cemented 8¼-inch casing at 2,610 feet in No. 1 McCain, Section 4-17-14. It has sand at 2,611-16 feet. Simms Oil Co. is drilling at 2,215 feet in No. 1 Crawford, Section 14-18-13. The Sun Oil Co. has a rig up for No. 1 Thompson, Section 10-18-13.

Ouachita County

J. G. Reynolds' No. 1 Chandler estate, Section 3-14-18, which tested salt water in sand at 1,829-33 feet, is to be deepened. Humble Oil & Refining Co. has a rig up for No. 1 Lancaster, Section 15-14-19.

Bradley County

Johnson & Adams are drilling at 1,640 feet in No. 1 Southern Lumber Co., Section 12-12-12.

Clark County

Whelan Oil Co. had a showing of oil at 1,332-38 feet in No. 1 Burrow, Section 35-10-20, and is arranging to set 8¼-inch casing at 1,332 feet.

Columbia County

Columbia Oil Syndicate is killing a fresh water flow at 2,350 feet in No. 1 Whitehead, Section 14-19-23. Mitchell & Isles are drilling at 2,145 feet in No. 2 Bodcau, Section 4-20-21.

Grant County

Shaffer Oil & Refining Co. has set the 12½-inch casing at 103 feet in No. 1 Long Bell, Section 36-5-12.

LaFayette County

Arkansas Fuel Oil Corp. has abandoned No. 1 Duty, Section 11-19-25. Salt water was found at 2,642 feet.

LOUISIANA-ARKANSAS

(Continued from Page 59)

operators have just finished drilling out the plug.

L. A. Berston is bailing No. 6 Murff, Section 12-21-16, to make a test of sand at 1,080 feet. In Section 33, W. D. Chew is setting 6-inch casing at 1,810 feet in No. 5 fee. In Section 26-21-15, Bussa & McGoldrick are setting 6-inch casing at 1,400 feet in No. 6 Beckham. Dixie Oil Co., in Section 13, is drilling No. A-2 Noel at 3,692 feet. No. 81 Robertson, same section, is somewhat deeper at 3,753 feet. The same company's No. 86 Robertshaw, in Section 14, is at 1,500 feet, where 8-inch casing is being set. The No. 10 Slattery, Section 27, is being drilled at 3,853 feet. Gulf Refining Co. has started operations in No. 13 Tyson, Section 14, and is at 295 feet, where the 12½-inch casing has been set. Haynes Brothers have a derrick up for No. 1 Murray in the same section. In Section 23, Magnolia Petroleum Co. has a sand at 1,620 feet in No. 20 Dillon. Arrangements are being made to give the sand a test. The same company's No. 20 Robertshaw, in the same section, is drilling at 3,438 feet in a limy shale. Ohio Oil Co. has made a location for No. 25 Smith in Section 12. Shreveport Oil Corp is drilling around 1,060 feet in No. 2 State, Section 27. The Texas Company's No. 47 Caddo M. L. Co., Section 23, is drilling in shale at 3,647 feet. The same company, however, has abandoned temporarily its No. 5 Hicks & Payne, Section 21. This test is at 3,143 feet. In Section 31, Tholl Oil Co. is drilling at 1,420 feet in No. 3 Muslow. Thompson and associates' No. 7 Muslow is shut down, waiting on a standard rig, at 2,210 feet.

Gulf Refining Co.'s No. 266 Ferry Lake, Section 28-20-16, is to be standardized at 2,260 feet. The No. 267 also is waiting on a standard rig at 2,246 feet. The same company is rigging up for No. 268 Ferry Lake in Section 22. In Section 10, The Texas Company's No. 1 Hardy is drilling in a sand at 2,302 feet. Gulf Refining Co. has a derrick up for No. 5 Wemple, Section 14-20-15. M. I. Morgan's No. 8 Glassell, Section 10, is drilling at 1,980 feet. In Section 15, Simplex Oil Co. is rigging up for No. 2 Schmidt.

Magnolia Petroleum Co. is core drilling in a sandy shale at 2,228 feet in No. 4 Planters, Section 7-21-14. Ohio Oil Co. is drilling at 2,070 feet in No. 1 Moodie Fortner, Section 5-22-16. Standish Oil & Refining Co. has cemented 6-inch casing in No. 11 Allen, Section 23-22-15. The Texas Company is at 75 feet in No. 1 Long, Section 15-15-12, this test having just been started. Tubbs and associates have a derrick up for No. 1 Hines, Section 9-14-16.

La Salle Parish

Derricks were erected for two new Urania Pool wells. These were the Louisiana Oil & Refining Co.'s No. B-37 Tremont, Section 25-10-1e, and Wingfield and associates' No. 2 Gibson, Section 2-9-1e. The latter operators also have started drilling in No. 1 Gibson, same section. They drilled out a 10-inch plug at 100 feet and now are at 1,470 feet, where 6-inch casing has been set. Yeary & Bristol are drilling a new well in No. 5 Urania, Section 8-10-2e, which is being core drilled at 1,515 feet.

The Urania Pool also got two good wells during the week in Wingfield and associates' No. 6 Urania, Section 2-9-1e, which is flowing 200 bbls. daily from broken sand at 1,490-1,506 feet, and Ayres Brothers and Tremont Lumber Co.'s No. 4 Tremont, Section 30-10-2e, which is flowing and estimated 1,000 bbls. daily from sand at 1,529-31 feet.

Monroe District

In Morehouse Parish, Consolidated Carbon Co.'s No. 1 White, Section 16-20-4e, is drilling at 850 feet. This is the second hole for the test. Louisiana Development Co.'s No. 38 fee, Section 21-20-5e, is drilling at 2,158 feet. In Section 18, Natural Gas Products Co. is at 1,503 feet in No. 1 Handy. United Carbon Co. is drilling No. 1 Townsend, Section 29-21-5e, at 2,035 feet.

In Ouachita Parish, Consumers Gas Co. has started drilling in No. 1 Williams, Section 10-18-5e, and now is at 50 feet. Jordon Drilling Co. got a 4,000,000-foot gas well in No. 1 Moore, Section 18-18-4e. It is producing from sand at 2,235 feet. Ladell Properties, Inc., is at 1,685 feet in No. 39 fee, Section 1-19-4e. Locations have been made for No. 40 fee, Section 29-20-5e, and No. 41 fee, Section 31-20-5e. In Section 20-20-5e, Louisiana Gas Products Co. has cemented 6-inch casing at 2,163 feet in No. 5 Dewdrop. R. W. Rhodes' No. 1 Hutch, Section 28-23-2w, Union Parish, is in lime at 2,700 feet.

Webster Parish

Magnolia Petroleum Co.'s No. 3 Cox, Section 23-21-10, is shut down, waiting for 13⅜-inch casing. This is a new test on which drilling was started the past week, the hole reaching a total depth of 314 feet, where the casing will be set. In Section 21, Magnolia Petroleum Co. has a derrick up for No. 1 Marshall. The same operator, in Section 21, is bailing the casing in No. A-2 Robins. This test is at a total depth of 2,560 feet. Louisiana Oil & Refining Corp, in Section 23, will bail No. 1 Davis in the near future. Total depth of this test is 4,346 feet. Northwest Louisiana Gas Co.'s No. 1 Coyle, Section 22, is in lime at 3,425 feet.

ARKANSAS

Union County

Union County got five new wells during the week, of which three were from the new 2,700-foot level. Of these, the National Gas & Fuel Corp.'s No. E-1 Murphy, Section 9-16-15, the Norphlet area of Smackover, is pumping 30 bbls. of oil daily from sand 2,759-73 feet. Ohio Oil Co.'s No. 4 Murphy, same section, is estimated at 4,000,000 feet of gas from sand at 2,691-2,713 feet. The Imperial Oil & Gas Producing Co.'s No. 7 Murphy, also the same section, is estimated as making 4,000,000 feet of gas in sand at 2,697-2,707 feet. The latter well has a rock pressure of 270 pounds. This is an old well deepened, it originally being completed flowing 1,000 bbls. of oil daily. In Section 10, Roxana Petroleum Corp. completed No. 3-A Flenniken, after deepening it from 2,596 feet, where it originally was completed, making 30,000,000 feet of gas and a spray of oil, to 2,601 feet. At the latter depth, it is making 200 bbls. of fluid, of which 90 per cent is salt water.

In the Louann sector of Smackover, Magnolia Petroleum Co.'s No. 4 Saxon, Section 5-16-16, is pumping 20 bbls. of oil at 2,253-60 feet.

Gulf Refining Co. is nearing the 2,700-foot sand in the Norphlet area in its No. 23 Murphy, Section 9-16-15. This well is being drilled at 2,679 feet after having drilled out the 6⅝-inch plug at 2,676 feet. Hollifield and associates are waiting on a standard rig for No. 2 Murphy, same section, with 300 feet of oil standing in the hole from 19 feet of broken sand at a total depth of 2,757 feet. Also at this interesting depth, and in the same section, is Keen & Woolf's No. 5 Murphy. A short string of 4-inch casing has been set at 2,706 feet. Stewart and associates have cemented the 6⅝-inch casing at 2,761 feet in No. 8 Murphy, same section.

Also in this same section, Peer Oil Corp. is drilling at 2,600 feet in No. B-1 Palmer. Natural Gas & Fuel Corp. has cemented a mixed string of 4½ and 5⅜-inch casing at 2,312 feet in No. 4 Bilyew. O. G. Murphy is waiting on a standard rig for No. 6 Murphy. This test has 1,600 feet of fluid standing in the hole from sand at 2,337-40 feet. Lion Oil & Refining Co. is drilling at 2,316 feet in No. H-2 Murphy. A short string of 4½-inch casing was cemented at 2,312 feet.

In Section 10, Humble Oil & Refining Co. has a rig up for No. 10 Pate. Lion Oil & Refining Co. is arranging to test No. A-9 Flenniken. In this test, the 6⅝-inch casing was cemented at 2,360 feet and the hole plugged back to 2,363 feet after being drilled to 2,396 feet. No. A-11 Lawton is being drilled at 1,930 feet.

In Section 3, Gulf Refining Co. is drilling at 2,000 feet in No. 44 Hardy-Murphy. Magnolia Petroleum Co.'s No. 9 Murphy, Section 8, is waiting orders at 2,628 feet. It cored a sand showing oil at that level. The same company is drilling at 2,540 feet in No. 6 Wilson, Section 17-16-15.

The preceding operations are all in the Norphlet district. In the Louann Pool, Magnolia Petroleum Co. is drilling at 280 feet in No. 1 Union Saw Mill Co., Section 21-16-16. W. H. Gilliland's No.

B-1 Hodges, Section 1-16-17, which tested salt water with a show of oil at 2,527 feet, will be deepened. Magnolia Petroleum Co. is reaming in No. 2 Crawford, Section 8-16-16, to set the 6⅝-inch casing at 2,602 feet, and in Section 7 is drilling No. 3 Freeman at 2,400 feet. National Consolidated Petroleum Co. is waiting on a standard rig for No. 2 Fagg, Section 8. It has 260 feet of oil from sand at 2,628-39 feet.

In the main El Dorado Field, Mountz and associates are reaming to the bottom at 1,111 feet in No. 6 Pratt, Section 8-18-15.

Ouachita County

Conspicuous in Ouachita County developments was the comple ion of the Texas Pacific Coal & Oil Co.'s No. 9 Laney, Section 31-15-15, pumping 200 bbls. from sand at 2,567-83 feet. This is in the Norphlet Pool of the Smackover Field. In Section 2-16-15, the Unity Petroleum Co. has abandoned No. 1 Murphy at 2,676 feet.

Gulf Refining Co. is drilling at 1,775 feet in No. 11 Bennett, Section 33-15-15. In the same section, Sunny Jim Oil Co. is in a hard, sandy lime at 4,296 feet in No. 12 Berry. Unity Petroleum Co.'s No. 8-A, same section, is pumping salt water from sand at 2,388 feet. Imperial Oil & Gas Producing Co.'s No. 9 McClanahan, Section 8-16-15, is shut down because of high water. It tested dry with a show of oil and salt water at 2,680 feet. Marine Oil Co. will plug No. 7 Umstead, Section 5, back to the Meakin sand. This well formerly was completed at 2,378 feet, flowing 3,500 bbls. of oil. No. 11 Umstead, same section, is to be standardized and is shut down waiting the rig. It has 1,000 feet of oil standing in the hole from sand at 2,356-62 feet.

In the Stephens Pool, Magnolia Petroleum Co., in No. 2 Gosden, Section 15-15-19, has recemented 6-inch casing at 1,546 feet because of leaking 8-inch casing. Wesson and associates are to standardize No. 1 Culp, Section 22. It has 11 feet of sand with total depth of 2,212 feet.

Nevada County

The only completion in Nevada County was Fruen and associates' No. 1 Cross, Section 12-13-22, which was abandoned as dry at 1,720 feet. The same operators are drilling at 1,975 feet in No. 1 Rhodes, Section 22-12-21.

NEW ORGANIZATION BIG AID TO GAS MEN

(Continued from Page 41)

ly and urged closer co-operation between regulatory bodies and utility companies.

Benefits of Conservation

William F. Chisholm, director of the minerals division of the Louisiana Conservation Commission, told of the benefits of co-operation in his state. He said gas companies in that state co-operated to the limit with his department and that the only serious trouble in his department experienced was with fly-by-night operators. No steps on major problems in that state are taken without first being taken up with operating companies. He explained that the resources of the Monroe gas field, the largest of its kind in the world, are being conserved by modern methods of conservation.

In connection with rates he urged the gas men to correct the erroneous idea the general public has "that the Lord put in the ground for their use an inexhaustible supply of gas to last until eternity." He was of the opinion that the distributing companies should educate the public through intelligent publicity that what gas we have is there as long as it is conserved. L. W. Cary of the Oklahoma Gas & Electric said that such publicity was expensive and necessarily must be founded on facts. He suggested the association take some steps in that direction with the view of aiding in the solving of that problem.

Leading a discussion in the methods of storing natural gasoline, Emby Kaye, superintendent of the gasoline plants for the Skelly Oil Co., told the gas men who operate natural gasoline plants in connection with their operations to store gasoline as the market dictates for a minimum of 60 days. When the natural gasoline price structure is in such a deplorably weakened condition as it now is it is profitable to store the product for a better market.

Mr. Kaye presented figures on storage costs and explained that the small manufacturers have the least storage, yet their output practically dominates the natural gasoline market. He urged them not to sell at any price to dispose of their product but to make arrangements with a large consumer to absorb their production.

Topics Much Discussed

Three topics, "Merchandising of Gas," Pipe Line Corrosion" and "Cleaning Gas in Transportation," were thoroughly discussed questions before the meeting.

The first topic was more lengthily discussed when the gas men started exchanging ideas for the creating of new business. The keynote of each address on the subject was that gas men in general were far behind the times in going after new business and permitting other industries to take business away from them.

The discussion was led by Chester May of the Lone Star Gas Co. of Dallas who said the subject was one of vital importance with most consumers' boosters and with the gas industry failing to take advantage of features in connection with that. He compared the gas industry with the electrical industry and explained how the latter industry was constantly searching for and creating new business.

A sales organization was suggested as one remedy. No record of types of equipment and appliances are kept by distributing companies who could expand greatly in that direction. He urged an organized effort for new business and personal contact with the consumer as well as a home service staff for domestic users to acquaint them with new appliances and to render what service they could towards building up good will. An aggressive effort should be made for new subscribers and a study made of the possibilities in installing new appliances, with the idea of selling more gas to old subscribers.

One delegate said the gas men usually took business as it came. He said his company was laying plans for the sale of more gas to old consumers and to meet competition to increase summer business to try to equalize the load carried in their lines.

Increase Industrial Load

Officials of the Fort Worth Gas Co. showed how their industrial load was increased and good will created through a survey of industrial connections to show those consumers where they could economize. Each plant's problem was analyzed and recommendations made. This usually resulted in less consumption by those particular consumers but created a good will that spread to other industries and the result was more business.

H. C. Morris of the Dallas Gas Co. gave some interesting figures revealing the value of consumers in the negro districts, which has been a question of much debate. A survey was made and a line extended. After completion the line had three times as many consumers per mile of main as were in other sections.

Gas refrigeration was suggested as one method to increase the load during the summer months. While gas refrigeration has not been thoroughly tested in the South, one member said it was a success in the North and should be in the South. He urged the distributing companies to give gas refrigeration a thorough test, searching out the defects and having the manufacturer remedy them before placing on the market for an aggressive sales campaign. He predicted that gas refrigeration would mean three times more than the water heaters do to gas men.

Mr. May said one of the biggest problems of gas men today is salesmanship. Mr. Rosenkrans of the Empire company, who read a paper at a previous session, amplified the statement. He said particularly trained salesmen were needed and that a new business department could be made into a great success.

C. A. Winder of Fort Worth said the electric companies were easily beating the gas companies in selling heat because the gas companies were not offering any stiff competition. He suggested the creating of a research department to study the value of the product being sold and declared that with such study and salesmen armed with facts that gas companies could meet their competition easily and beat them at almost every turn.

Corrosion Big Problem

Edgar G. Hill of the Interstate Gas Co. brought out another feature of industrial loads when he said in most cases the industrial rate must be low and that the field was limited in comparison with those in the East and North. W. F. Chisholm of the Louisiana Conservation Commission concurred in that view and urged the gas men to get behind movements to bring more industries to the South. He said that the chemical industry was at a standstill in the South and no concerted movement was being made to develop some of the great resources in the South.

In leading the discussion on pipe line corrosion, E. A. Clark said the gas industry was indebted to the Government for the long series of tests that have been made with the view of helping solve corrosion problems. On the Oklahoma Natural company's line a bituminous preparation is found to be the most successful method of combating corrosion. Where practicable pipe for lines is brought to the warehouse where a furnace has been installed. The pipe is heated to a red heat which knocks off the scale if old pipe and removes the mill varnish if new pipe. The remainder is knocked off with stiff brushes and then the pipe is scrubbed. When it cools a priming coat is put on. Absolute dry pipe is essential for best results for the priming coat. Cleaning machines are used when the cost prohibits bringing pipe to the warehouse.

B. R. Bay of the Empire company said it appeared that it would require 10 per cent of the total cost of a line if a long life treating process was to be used in fighting corrosion.

It was brought out that one line had been treated with two parts pitch and one part tar applied hot and wrapped with tar paper and coated with another hot coal tar mixture. While the line has not been down any great length of time, a part of it was dug up for inspection. The pipe was in excellent condition and some of the white lead figures painted on at the mill were still visible.

How the Interstate Gas Co.'s 22-inch line from Monroe to Baton Rouge, La., was treated against corrosion was explained by E. G. Hill of that company. An exhaustive study was made by that company of various lines and because the Interstate company's 170-mile line went through all kinds of soil conditions and its cost justified the best.

Methods Employed

Pipe was ordered from the mills without its varnish so a good base or priming coat could be put on at the various camps along the line. Rust on the pipe was scrubbed off and the priming coat was applied from end to end. The big pipe was put on skids and a hot coating of coal tar preparation was applied as the pipe was rotated. Coating the Dresser couplings proved difficult and all problems in connection with that were taken up with the coupling manufacturers before coating. The cost of such treating ran high. The line has been in less than a year and what results will be obtained are, of course, to be proven.

Walter Reid, consulting engineer, Dallas, led the discussion in "Cleaning Gas in Transportation." Little has been done in the Mid-Continent towards removing solid matter from gas lines, he said. Sand, rust and mill scale after a long travel through a high pressure line is ground into dust and drips and separators have no effect on it. In the East dry filters are used with success. Curled hair or a similar filter serves to slow down the velocity of the gas and provides an area for the dust to collect. Such a system has not proven satisfactory in the Mid-Continent. Scrubbing with oil and water is the best method being used in the Mid-Continent and oil in the scrubber seems to be the best.

During the discussion it was brought out that some lines are equipped with scrubbers, using water where the wells put sand in the line. On the Lone Star company's line at Durant, Okla., a scrubber patented after the Empire company's design is used with success. Two weeks after the line was in operation trouble developed from sand going through the line. A scrubber was put in and the gas sent through oil and since the installation no complaints have been received. About a bushel of dirt is taken out every two weeks.

This particular type of scrubber has obtained an efficiency approaching 100 per cent. At affords a lower maintenance cost and a better assurance of constant service. Several engineers told of experiments with type scrubbers but in the end scrubbers were designed after the design developed by the Empire company.

B. R. Bay of the Empire company explained to the gas men the success the Empire company had had with the scrubbers. The scrubber is a vertical cylindrical shell 24 to 60 inches in diameter, depending on the size needed. The inlet is in the side near the bottom. A gauge under the inlet pipe shows the height of the oil seal. The gas goes into the oil through smaller pipes attached to the inlet pipe.

Oil and gas passes up through a partition about the middle of the shell and shaped similar to a straw hat. The sides are perforated and oil and gas coming through the perforations does so in a whirling motion. The gas goes on up through the outlet pipe and the oil runs back down to the bottom of the shell through pipes on the sides of the partition.

PECULIAR PROBLEMS IN THE ROCKY MOUNTAINS

(Continued from Page 42)

$1,200 to $1,500, depending upon size and items included. A rotary rig can be had of the turnbuckle type for $1,350 at Casper; this type of rig can be taken down after the completion of a well much more readily and with less loss than the regular board derrick.

Company Tools Used Largely

There are drilling contractors in the Rocky Mountain region, but the many phases that enter into the drilling of a well in Wyoming has led to the exclusion of the contract type of drilling wells in that State; and more often, the oil company owns its own tools and equipment and hires the crew, or drills the well on what is termed a labor contract. In the latter case, a responsible man is given a contract to make use of the company's tools and put down a well, he to furnish the crew and men required. This type of contract is usually paid for at a footage rate, although sometimes a lump sum and specified depth is made the basis of the agreement.

The labor contract price differs so greatly here on account of the location, distance from supply point, and many other considerations, that no general figures are obtainable. In Salt Creek, a resume of several wells drilled by the labor contract method averages around $4 per foot, and the wells there that have been drilled by contractors who have their own tools, and supply everything except rig and casing, run from $3 per foot for shallow wells to $5 per foot and even higher for the deeper holes.

Cost of Wildcatting

A wildcat well varies in cost greatly. The chief factors entering into the cost are distance from supply point, depth and water supply. The last item will

sometimes amount to very little, in other cases it may run as high as $150 per day. Certain wells have been drilled where a time limit was placed on the completion of the hole, and where there was no water supply, and the water for the work was trucked in on tank trucks. Again, there have been wildcat locations where a river was close by and furnished an abundance of good water for the work, and the expense incurred in furnishing the water consisted in setting a boiler and pump, or a gas engine and pump, at the supply end and laying a short pipeline. On the whole, however, this is an arid region, and the question of water is always a most serious one. One large company in this region laid a long pipeline recently, and this meant working over a virgin sagebrush country a large part of the way. This work was done with tractors and close-coupled trucks as trailers upon which the load was carried. The officials in charge declared they did not care about roads with such equipment, as the caterpillar tractors laid their own roadbed and went anywhere.

Single wells in this region have cost as high as $300,000 to complete, and it is common to hear statements of deep wildcats costing $100,000. However, the average well in the Rocky Mountain region, taking into consideration the shallow wells that are put down only about 1,000 feet or so, will cost about $30,000, and this figure is considered as close an estimate as can be had for the whole region.

Usual Equipment Used

The usual equipment met with in the other oil regions of the country is used in the Rocky Mountain region. Steam is the main power, though recently the multiple-cylinder gas engine has come to prominence and is making a good reputation for itself among the drillers. We have some special equipment peculiar to the Wyoming territory, but nothing that has no counterpart in any other oil region. In a few instances, where wildcats have been located close to a power line from some hydroelectric station, electricity has been used at the well for the prime mover, but this is exceptional. A few instances of electricity being used for producing oil will be described later on with the new electric power station of the Midwest.

Some unusual drilling outfits have also been used in this region. One rotary drilling outfit put down several wells in central Wyoming a few years ago with a rotary that took its water down the outside of the drill pipe and pumped it up through the pipe. It was not considered successful, although, as stated, several wells were put down. Another outfit is working in Montana with an enlarged type of the diamond drill that bores a 6-inch hole. Some wells were drilled to shallow depths some years ago with a hydraulic stream of water at the drill point.

Shale and Sandstone

In drilling in the Rocky Mountain fields, the formations are mainly shale and sandstones. The shales are easy drilling, yet they present the greatest problems to the operator. There is little or no "floating sand," but the shale walls of the wells cave badly in almost every instance; and one started, there seems to be no end to the caving conditions. Two great divisions of geology produce oil here, the Cretaceous and the Carboniferous, and the former has the better grade and larger quantity of petroleum. The Carboniferous formations carry black oils usually. The Cretaceous shales always cave badly if let stand, but the Carboniferous shales stand up better, and often an open hole can be carried to great depth safety there. There is no absolute certainty, however, that the Carboniferous shales will not cave. The Carboniferous has many limes, while the Cretaceous has only a few scattered ledges of this class of rock. The shales of the Cretaceous are easily changed, when wet, to amorphous muds; but the Carboniferous shales are more like the "Pencil Cave" of the West Virginia oil fields. The sands are usually rather soft and do not cut the bits much. Sometimes a ledge of true quartz is found that is as hard drilling as can be found anywhere; but as a rule, the drilling in the Rocky Mountain territory is regarded as soft.

Oil and Gas Recovery

After the well is drilled and finds production, either gas or oil, the expense is merely begun for the operator in the Rocky Mountain region. In the case of a dry hole, the usual procedure in case the company has no finances to make tests in other structures is to sell the outfit at a loss, and close up the affairs of the firm. If the well strikes gas, it may be found possible to furnish gas to nearby cities or towns; and in case there is no such available market, a lamp black and gasoline plant may be placed to utilize the gas production.

Two systems are in use in this region for the extraction of gasoline from natural gas, the compressor system and the absorption. The compressor system is most in use in the Wyoming fields.

In the installation of either gasoline or carbon black plants, or both, the cost depends so much upon location and local conditions, also size of gas production to be handled, that no definite figure can be given. The plants of this region run from a single unit of 35 horse power to the big compression and absorption plant of the Midwest at Salt Creek that is the largest in the world.

However, gas, gasoline and lamp black are merely incidental side issues to the main business of the petroleum industry in the Rocky Mountain region. Oil is the prime factor, and every well drilled is put down with the idea of oil production in the minds of the firm's officials and stockholders. If a well strikes gas, it is better than a dry hole, but a disappointment just the same; and even in case gas is found, this often becomes a liability rather than a resource. In one well in this region, a production of gas was found that would not burn, and was thought to be helium; it turned out on analysis to be carbonic acid gas that through some freak of nature had been formed in the earth and become bottled up in the sand.

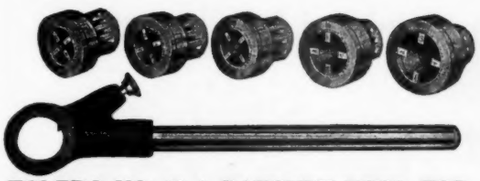
Many Grades of Oil

The Rocky Mountain region produces many different grades of oil, probably more different kinds of crude than any other region, and the methods of production vary with the oil. However, the main production of this region is produced by flowing the wells by the gas pressure in the field. In some fields, Cat Creek for instance, there is no gas, yet the wells flow. It is thought that a hydrostatic head is pushing the oil out at this field, for when the wells were first drilled there, the producers merely placed a valve on the lead line and opened it, as the production was wanted for marketing, the oil flowing from the wells like so much water. However, it now appears that Cat Creek wells, especially around the edge of the field, require pumping to obtain the production, and this is also becoming apparent in many other fields of this region.

One main factor in the production of oil in the Rocky Mountain fields should be kept in mind, however, when considering oil production there. Up to recently, this region had never had an outlet for its oil production except in tank-car shipments by rail. The Sinclair Pipe Line Co. has a pipeline that will carry Rocky Mountain crude to other refining centers from Wyoming; and until this line was finished, the oil production here had been shipped out mainly as refined products, although a large quantity of crude oil had gone out by rail, too.

When the Salt Creek Field was brought to about 100,000 bbls. daily production, there was no market for this quantity of oil. The Big Muddy and other fields of Wyoming had to have an outlet for the crude, and the situation created an oversupply that the refiners could not take care of. The producers themselves came together and solved the problem by prorating the production from each lease, so that the oil could be taken care of, although the production as a whole was reduced considerably under its potential figure. With this condition prevalent in most of the fields, the necessity of placing wells on the pump was obviated, and it became a question with the producer of how much oil he could hold back.

The topography of the fields in the



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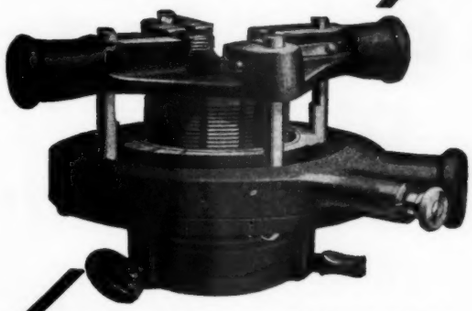

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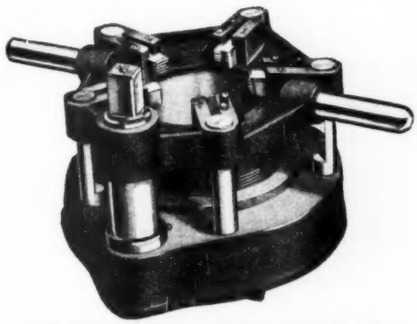

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Rocky Mountain region may be classed as rolling plains country. In many of the fields, the escarpment, or rim rock, makes steep bluffs or cliffs of rock; while in other operations, the escarpment has been worn down and eroded to nearly a level with the surrounding country. In Rock River, Wyoming, for instance, the field presents about the same aspect as the country thereabouts; while at Elk Basin, Wyoming, the field is down in a deep gorge, or valley, hemmed in by high cliffs of rock that rise straight up in most of the circumference of the field, and which necessitated the lowering of the first rig that drilled the first well there over the cliffs by cables, because there was no road down into the gorge at that time. After reaching the bottom, however, the land is rolling and fairly easy to move material over. At Salt Creek, the rim rock is cut with canyons and gulches at many points, or talus slopes lead up to the top in such a way that roads can be made over the escarpment into the field with ease.

Where streams exist in fields, the stream bed presents still another problem. The surface formation in the fields is usually shale, and the streams cut down through this material until the bed is often 20 feet or more below the average surface, and the shale walls are usually perpendicular, making the building of many bridges a necessity to the operation. In Teapot Dome, Wyoming, Little Teapot Creek and Cold Springs Creek flow north through the center of the structure, and these streams pass between high perpendicular banks about 20 feet above the stream bed, and can only be negotiated by pedestrians in many places. These streams are usually dry in the summer months, but during the other seasons carry some water and, at times, under the influence of cloudbursts, flood the surrounding area. The larger streams are even dangerous to make camp near during the cloudburst season, which usually lasts for a few weeks in the spring, for the rise is so hapid that it constitutes a menace to the unsuspecting.

PRESSURE CONTROL IN FLOWING WELLS

(Continued from Page 38)

small shale partings that cut across the bedding planes. Variations in sand texture are greater laterally than vertically, and these variations are partly responsible for the so-called "spotty" production in the Prue sand. The sand is rather hard and compact. Large volumes of "free gas" were at one time present in the sand, particularly on the high parts of the structure, as much as 60 feet having been reported as originally containing gas but no oil.

Twenty Wells Tested

Twenty wells were tested, nearly all of which had stopped flowing or were "heading." Owing to a lack of facilities for obtaining individual gas and oil production, sufficient data for plotting were obtainable in only a few instances and even in these the data did not include the entire well performance during the duration of the tests. The equipment used in the tests was similar to that where pressure control is in use. Several types of tubing and casinghead were used and each proved satisfactory. Flow connections, consisting of either 2 or 3-inch pipe, and similar to the California or the Texas "Christmas Trees," were used.

The usual procedure was to run in a string of 2-inch tubing to the top of the sand or 10 to 15 feet above, lay the tubing and casinghead, and the flow connections. The flow connections were then connected to the flow-line, usually 3 inch, leading to the trap. The tubing was left open to the atmosphere and the gate valves on the casinghead were closed. Either a recording pressure gauge, or if this was not available, a spring gauge was placed on one of the side outlets on the casinghead. Usually the well would start flowing after the casing pressure had built up to 200 pounds or more. If not, a swab was run to lighten the fluid column in the tubing. In several instances the tubing had to be raised one or more joints before the well would commence flowing. Where a trap was available for individual well tests, an orifice gas meter was installed at the trap.

"Beaning" Methods

The wells were usually allowed to flow through the tubing for several days without inserting any flow-nipples in the flow connections, after which a 1¾-inch flow-nipple was inserted. The usual method of "beaning-up" the well (decreasing the orifice by inserting flow-nipples with smaller internal diameters) was to decrease the sizes either by one-fourth or one-eighth inch, the idea being that too rapid changes would result in erratic flow conditions. During the "beaning-up" stage, it was customary to make changes every three or four days. The same procedure was usually followed in "beaning-down" a well. As it was impossible to obtain daily individual measurements on many of the wells, the plan adopted was to maintain a casing pressure at 100 pounds or more, depending on the flow conditions of the well. When a well "headed" it was found that the number of flows could be increased by "beaning-up" and finally the flow would become steady. In well No. 2, in which the bottom of the tubing was placed below the top of the oil sand, and where later, the upper 250 feet of tubing became clogged with paraffin, "beaning-up" would not have produced the same results as evidenced by the decrease in internal diameter of the flow-nipple due to paraffining.

The usual proceude in casing a well was to cement a string of 8¼-inch casing at some distance above the Prue sand and then set either a 6⅝-inch liner or a full string at the top of the sand, or at some distance above. Some wells which were cased with a full string of 6⅝-inch casing were not equipped with a casing clamp between the 8¼ and 6¼-inch casings. At several wells where casing clamps were not used, gas was found escaping from between the two strings of casing after the casing pressure had been built up an appreciable amount.

Placing Traps

Traps had already been placed on the different leases, only one change being made in the original installations, a smaller trap having been set up for well No. 2 and well No. 3.

Flow- line pressures varied from 1 to 16 pounds, depending on the distance from the well to the trap, the size of the flow-line, and the difference in elevation between the trap and well-head. Trap pressures varied from atmospheric to 25 pounds, the higher trap pressures being required to furnish gas at the desired intake pressures for the portable compression gasoline plants. It was observed that in instances where larger flow-lines than were necessary had been used, and where the traps were at a higher elevation than the well-heads, slight fluctuations in flow-line pressure took place. This was due to the by-passing of gas in the flow-lines and a resulting fluctuation in fluid head in the lines.

Higher casing pressures prevailed in wells where the casing was set at more than the usual distance above the top of the sand. This was due to the lesser lift being required. The average casing pressure held ranged from 100 to 125 pounds, the maximum being 165 pounds. The average tubing pressures ranged from 15 to 25 pounds, with the maximum (excepting heading wells) at 45 pounds. The average ratios of tubing pressure to casing pressures ranged from 1 to 5, to 1 to 4. The highest ratio was 1 to 40. More gradual declines in casing pressure occurred in wells located down the structure where oil was reported in the top of the sand when wells were drilled in. A number of offset wells which had been equipped with packers set near the bottom of the tubing did not flow for as long a period as did wells equipped for pressure control.

Shut-in Pressure Tests

Several shut-in pressure tests were made on wells prior to the application of pressure control. In well No. 1, a mastergate was set on the casing and the well was shut in. The shut-in pressure built up to 299 pounds in eight hours. Not knowing the depth of fluid in the well, which was not obtainable on account of the constantly changing fluid level due to "heading," the rock pressure

could not be determined. In another well, the shut-in pressure built up to 425 pounds, while in a third well it built up to 450 pounds. These high shut-in pressures indicated a remaining rock pressure of approximately 500 pounds.

Paraffin deposition took place in the tubing in well No. 2. A small amount of paraffin had gathered in the flow-nipple prior to the time that the well started heading. Later, the tubing was removed and it was noted that the upper 250 feet contained considerable paraffin. The remainder of the tubing was comparatively free from paraffin. As the flow-nipples of other wells had been examined at different times, and in each case found to be free from paraffin, it was believed that the paraffining in well No. 2 was due to the fact that the bottom of the tubing had been placed below the top of the oil sand. A small amount of detritus, consisting of a mixture of fine sand, shale, and a waxy substance, probably paraffin, was found on the shoulder of the upstream side of the flow-nipple in several other wells. This was probably due to construction of the flow-nipples, which caused eddying or a decrease in velocity, caused by the oil coming in contact with the shoulders of the flow-nipple. At any rate, the flow-nipples did not contain any paraffin in their orifices.

Production for the first several days following the pressure-control installations in wells which were pumping or flowing by heads was disregarded as an accumulation of oil took place in the well, also in the oil sand immediately surrounding the well during the period when tubing was installed and until the well was again placed on production. The daily production of most wells tested immediately prior to setting the tubing was not considered as the daily well production; since practically all the wells were allowed to produce directly into a flow-tank at approximately atmospheric pressure during the test, whereas, under normal conditions, they had been producing against 15 to 25-pound trap pressure, and usually against greater flow-line pressures. Gas-oil ratios in the tested wells ranged from 4,500 to 10,000.

Flowing Life Increased

As a result of the tests, the flowing life of the wells was increased from 3 to 6 months, in many instances more than doubling the flowing life of the wells. Three-quarters of the wells tested are still flowing. Daily production was increased in approximately half of the tests. Only one test showed a decrease, which amounted to approximately 20 per cent. Three wells which did not produce more than 10 bbls. when placed on the pump started producing at the rate of 30 to 47 bbls. when pressure control was applied. The gas-oil ratio was decreased from 10 to 40 per cent, resulting in a greater ultimate recovery. Clean-out costs were eliminated during the added flowing life.

Well No. 1 had arrived at the pumping stage. Well No. 2 had been pumping for about two months with an average daily production, for the week prior to pressure control, of 24 bbls. Well No. 3 was still flowing, though beginning to head when pressure-control equipment was installed.

An analysis of the composite results obtained by applying pressure control to wells in the Davenport Field indicates that this method of producing oil has been beneficial. It must be remembered that a majority of the wells had reached the pumping stage, and it is believed that if pressure control had been applied earlier in the flowing life of the wells, more conclusive and satisfactory results would have been obtained. A review of the tests indicates the necessity for obtaining accurate individual well measurements, in order to gain the best results.

With Large Volumes of Gas

Where large volumes of free gas overlie oil in the same sand, the greatest percentage of reduction takes place in the gas dissolved in, and associated with, the oil. Even in an area where large volumes of free gas overlie oil in the same sand, it is believed that pressure control is beneficial, although the daily oil production may be slightly decreased. Rapid withdrawal of free gas and consequent rapid lowering of rock pressure in the upper part of the sand will result in a dissipation of pressure into the gas horizon. It must be remembered that the oil and gas horizons are not separated, hence readjustments in pressure can take place vertically in the sand. As a result of this readjustment in pressure, it is highly probable that a migration of the volatile hydrocarbons, which supply the expulsive energy, from the oil into the sand originally containing only gas, has resulted. This migration would tend to increase the viscosity of the oil remaining in the oil horizon. Some migration of the lower hydrocarbons would also take place, but not to the same extent. The presence of the free gas in the upper part of the sand, which had to be produced with the oil, accounts for the high gas-oil ratios. Approximately 70 per cent of the gas produced, in the areas where large volumes of free gas were originally present, entered the wells from the gas horizon.

To Get Best Results

In order to obtain best results, the wells should be tubed before they commence heading, preferably when first completed, although the latter may not be feasible when the production is very large and when wells are drilled into the oil sand with cable tools by the dry-hole method. In case the tubing is incapable of taking care of the maximum production, the oil can be taken from both the tubing and casing until such time as the tubing is capable of handling the total production. Tubing should not be set below the top of the oil sand when the oil is of paraffin or mixed base, because there is a tendency for the sudden cooling, due to the rapid expansion of gas opposite the sand, to cause paraffining. As the pressure in the oil sand declines, the correct depth at which tubing should be placed becomes increasingly important. While there is an excess of pressure available to lift the oil through the tubing to the surface, the tubing may be set lower than is necessary without materially affecting the flow of oil. When the rock pressure has declined to the stage where a well will cease flowing, and when the tubing is set low, the well can be made to flow again by raising the tubing. Sometimes the raising of the tubing one joint will produce the desired results. The rate of flow of oil into the well decreases as the rock pressure declines, hence, if the tubing is set high in the well, it is often necessary to lower it in order to obtain maximum daily production.

The proper application of pressure control is beneficial as an aid in overcoming the deposition of paraffin in the wells. Considerable heat is absorbed in the rapid expansion of gas which takes place when the gas enters the well. Under these conditions, the well temperature is lowered, and paraffin may settle out, the amount of settling depending on the degree of cooling and the paraffin content of the oil. The cooling effect is partly overcome by holding a certain amount of pressure at the well-head, also by placing the tubing at the top of or above the oil sand.

Individual well production records, both oil and gas, should be obtained prior to applying pressure control as a means of determining the effect of regulated pressure in the production of different wells. It is realized that this work requires time and expense, yet it is believed that the data obtained are worth the cost. Even neglecting the present value of accurate individual well production records, their later value should not be overlooked in problems involving the repressuring of sands, as well as other methods of increasing the ultimate recovery from oil-bearing formations.

A. J. THOMPSON DIES

Capt. Alonzo J. Thompson, aged 87, pioneer oil producer, died suddenly at his residence in Titusville, Pa. He was born near Utica, N. Y., July 8, 1839, the same date as the birth of John D. Rockefeller. In 1866, Captain Thompson located at Pithole, but remained only a few months and for many years was interested in oil producing.

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REGISTRATION AT DALLAS GAS MEETING

(Continued from Page 41)

Davis, A. P., Sun Oil Co., Dallas.
David, Charles T., representative, S. R. Dresser Manufacturing Co., Bradford, Pa.
Dibbena, A. Y., auditor, The Guthrie Gas Co., Guthrie, Okla.
Doerr, E. S., inspector, Lone Star Gas Co., Dallas.
Doney, Louden C., Jr., vice president, Southwest Gas Co., Houston.
Dormant, J. A., superintendent of measurement, Houston Pipe Line Co., Houston.
Downey, Raymond E., meter inspector, Lone Star Gas Co., Dallas.
Dunn, J. A., meter inspector, Lone Star Gas Co., Dallas.
Dunn, J. H., gas measurement department, Lone Star Gas Co., Dallas.
Dunn, R. F., assistant superintendent, Southwestern Gas & Electric Co., Shreveport, La.
Duvall, J. W., house heating department, Oklahoma Gas & Electric Co., Oklahoma City.

Edge, H. S., clerk, Magnolia Petroleum Co., Dallas.
Egan, Paul A., Dallas Gas Co., Dallas.
Elliott, Wyley, manager, Camden Gas Co., Camden, Ark.
Everman, J. W., superintendent of public utilities, City of Dallas, Dallas.

Felt, Wright L., Dallas manager, Hope Engineering & Supply Co., Dallas.
Foster, Julian L., chief engineer, Lone Star Gas Co., Dallas.
Fraser, S. J., Prairie Oil & Gas Co., Independence, Kans.

Garver, W. J., assistant chief engineer, Lone Star Gas Co., Petrolia, Tex.
Gill, C. T., meter inspector, Lone Star Gas Co., Dallas.
Gissler, F. G., vice president, Conley Tank Car. Co., Dallas.
Goodenough, H. F., The Ac-Me Co., Dallas.
Gordon, John, superintendent, Interstate Natural Gas Co., Monroe, La.
Goughnour, J. H., assistant chief engineer, Lone Star Gas Co., Joshua, Tex.
Gray, R. B., meter inspector, Lone Star Gas Co., Dallas.
Greason, Charles D., public relations department, Gas Service Co., Kansas City.
Gwynne, R. D., western manager, Jos. Greenspons Sons Iron & Steel Co., St. Lou's.

Hall, O. D., assistant manager, Oklahoma Utilities Association, Oklahoma City.
Harwell, Sam R., clerk, Magnolia Petroleum Co., Dallas.
Hill, Edgar G., general manager, Interstate Natural Gas Co., Monroe, La.
Hinchey, W. J., operating department, Gas Service Co., Kansas City.
Hunt, H. D., foreman, Lone Star Gas Co., Fort Worth.
Humes, E. F., engineer, Railroad Commission of Texas, Gas Utilities Co., Austin, Tex.
Hunsaker, R. B., clerk, gas measurement department, Lone Star Gas Co., Dallas.
Hunter, Howard J., chemist, Columbian Gas Corp., Monroe, La.

Jackson, Frank, Industrial engineer, Fort Worth Gas Co., Fort Worth.
Jarvis, J. R., superintendent gas plant, Lone Star Gas Co., Dallas.
Johns, J. H., assistant chief engineer, Lone Star Gas Co., Loco, Okla.
Johns, W. E., chief engineer, Lone Star Gas Co., Healdton, Okla.
Johnson, Paul R., vice president, Union Gas Corp., Independence, Kans.

Karr, Fred, public relations, The Gas Service Co., Kansas City.
Laraze, F. E., assistant superintendent, The Palmer Corp., Shreveport, La.
Langan, G. G., district manager, Hill, Hubbell & Co., Tulsa.
Lash, R. H., vice president, The Fort Worth Laboratories, Fort Worth.
Levermore, George A., representative, B. F. Goodrich Rubber Co., Akron, Ohio.
Lomius, O. R., engineer, Lone Star Gas Co., Joshua, Tex.
Lussky, R. H., manager, Guthrie Gas Co., Guthrie, Okla.

McCarthy, E. R., Hill, Hubbell & Co., Tulsa.
McGowen, N. C., vice president, Palmer Corp., Shreveport.
McKiearnan, A. E., superintendent operations, Houston Gulf Gas, Houston.
McKinney, C. B., general manager, Houston Pipe Line Co., Houston.
McLaughlin, Harry, general superintendent, Municipal Gas Co., Dallas.
McMahon, J. B., salesman, The Foxboro Co., Inc., Dallas.
McNees, R. A., assistant superintendent, San Antonio Public Service Co., San Antonio.
McTee, A. R., editorial representative, Gulf Publishing Co., Houston.
Martin, G. W., purchasing agent, Dallas Gas Co., Dallas.
May, Chester L., general superintendent, Com. Natural Gas Co., Dallas.
Mayo, J. F., meter inspector, Lone Star Gas Co., Dallas.
Means, J. E., superintendent gas transportation, Southern Gas Co., San Antonio.
Miller, A. K., A. K. Miller Engineering Co., New Orleans, La.
Miller, A. V., superintendent, Southern Gas Line, Inc., Monroe, La.
Miller, Ed. S., manager, The Southern Distributing Co., Eldorado, Kans.
Minnig, Carl J., Phillips Petroleum Co., Bartlesville.
Mooreland, Samuel, manager, Hutchinson Gas Co., Hutchinson, Kans.
Moore, E. M., foreman, Lone Star Gas Co., Loco, Okla.
Moore, O. H., cadet engineer, Lone Star Gas Co., Dallas.
Morgan, James A., sales manager, Smith Separator Co., Tulsa.
Morris, H. C., V. D. & G. M., Dallas Gas Co., Dallas.
Murphy, Mike, superintendent of pipe lines, Magnolia Gas Co., Bethany, La.

Newbery, B. R., purchasing agent, Lone Star Gas Co., Dallas.
Nichols, C. S., foreman, Lone Star Gas Co., Irving, Tex.
Neill, A., gas department, Prairie Oil & Gas Co., Ranger, Tex.

Osburn, C. W., superintendent, gas department, West Texas Utilities Co., Abilene, Tex.
Otis, Spencer, Jr., Leadized Products Corp., Tulsa.

Page, Thode, foreman, measuring and regulating department, Dallas Gas Co., Dallas.
Parker, R. D., chief engineer, utilities division, Railroad Commission of Texas, Austin, Tex.
Parks, F. T., division manager, Gas Service Co., Joplin, Mo.
Pearson, H. F., general shop foreman, Dallas Gas Co., Dallas.
Pemberton, G. W., foreman, Lone Star Gas Co., Gainesville, Tex.
Pfenning, Ed. C., manager, Parsons Gas Co., Parsons, Kans.
Phipps, W. R., division manager, Gas Service Co., Wichita, Kans.

Randall, H. E., second engineer, Houston Gulf Gas Co., Houston.
Rawlins, E. L., associate natural gas engineer, U. S. Bureau of Mines, Bartlesville, Okla.
Reading, R. S., superintendent gas department, Southwest Gas & Electric Co., Texarkana, Tex.
Reid, Walter, consulting engineer, 816 Magnolia Bldg., Dallas.
Rhoades, F. L., The Palmer Corp., Shreveport.
Ritter, John A., production department, Sun Oil Co., Dallas.
Roberts, Jules D., Jr., industrial engineer, Lone Star Gas Co., Dallas.
Rogers, B. L., superintendent compressor stations, Lone Star Gas Co., Dallas.
Rogers, L. R., Wailes Dove-Hermiston Corp., Tulsa.
Rosenkrans, F. M., new business manager, Gas Service Co., Kansas City.
Rountree, Ray, meter inspector, Lone Star Gas Co., Dallas.
Rowland, A. E., clerk, Lone Star Gas Co., Dallas.
Rynerson, E., president, Dallas Foundry, Dallas.

Satterwhite, J. H., manager, Westcott & Greis, Inc., Tulsa.
Schieber, D. L., sales representative, Pittsburgh Equitable Meter Co., Republic Bank Bldg., Dallas.
Schmidt, E. F., superintendent, Lone Star Gas Co., Dallas.
Schofield, R. M., orifice meter inspector, Lone Star Gas Co., McKinney, Tex.
Seymour, E. C., Magnolia Petroleum Co., Dallas.
Shannon, O. K., president and general manager, Fort Worth Gas Co., Fort Worth.
Shipp, R. L., chief engineer, Lone Star Gas Co., Petrolia, Tex.
Sillers, D., superintendent gas measurement, Lone Star Gas Co., Dallas.
Simkins, J. O., clerk, Magnolia Petroleum Co., Dallas.
Smith, Cy W., The Borden Company, Warren, Ohio.
Smith, Fay, field foreman, Lone Star Gas Co., Pernell, Okla.
Smith, Fred, field foreman, Lone Star Gas Co., Petrolia, Tex.
Smith, Fred C., superintendent operations, The Texas Company, Dallas.
Smith, Harrison, engineer, Sanderson & Porter, New York.
Smith, Lawrence E., National Petroleum News, Tulsa.
Soles, W. E., gas department, Sun Oil Co., Breckenridge, Tex.
Soper, A. G., secretary, Dallas Gas Co., Dallas.
Stovall, E. E., chief meter inspector, Lone Star Gas Co., Dallas.
Stroud, E. B., foreman, Lone Star Gas Co., Richland, Tex.
Swan, G. J., manager, Capital Gas & Electric Co., Topeka, Kans.

Tolbert, Luther, main line foreman, Lone Star Gas Co., Joshua, Tex.
Taylor, L. H., chief engineer, Lone Star Gas Co., Healdton, Okla.
Thompson, A. W., district sales manager, Westcott Valve Co., Tulsa.
Thompson, F. I., engineer, Westcott & Greis, Tulsa.
Tipton, W. A., district manager, Durabla Manufacturing Co., Dallas.

Vandercook, R., assistant superintendent, pipe line department, Lone Star Gas Co., Dallas.

Wahl, H. W., Texas representative, Westcott & Greis, Inc., Dallas.
Wallace, David, Leadized Products Corp., Tulsa.
West, D. E., assistant secretary, Magnolia Gas Co., Dallas.
Williams, D. C., manager, Kay County Gas Co., Ponca City, Okla.
Wilmoth, M. E., meter inspector, Lone Star Gas Co., Dallas.
Wilson, C. F., general storekeeper, Lone Star Gas Co., Dallas.
Wilson, H., transportation inspector, Lone Star Gas Co., Dallas.
Winder, C. A., supervisor of public utilities, City of Fort Worth, Fort Worth.
Wood, T. B., superintendent, Joplin Gas Co., Joplin, Mo.
Woodard, J. E., engineer, Lone Star Gas Co., Duncan, Okla.
Wright, G., Lone Star Gas Co., Petrolia, Tex.
Wright, Wesley F., general superintendent, The Dallas Gas Co., Dallas, Tex.
Wooldridge, W. F., sales manager, Browning Ferris Machinery Co., Dallas, Tex.

Zumwalt, F. N., sales department, W. K. Henderson Iron Works, Shreveport.
Adlam, H. F., Lone Star Gas Co., Dallas.
Barber, Alex, Arab Gas Corp., Eastland, Tex.
Byrne, F. E., Lone Star Gas Co., Healdton, Okla.
Carleton, Roy, Lone Star Gas Co., Shamrock, Okla.
Hanlon, Thomas W., U. S. Cast Iron Pipe & Foundry Co., Dallas.
Mason, J. F., manager, Fort Worth Gas Co., Fort Worth.
McCabe, J. B., Municipal Gas Co., Dallas.
Pinkston, L. A., Jr., Houston Gulf Gas Co., Houston.
Rokestaram, George M., Lone Star Gas Co., Dallas.
Steger, R. B., Community Natural Gas Co., Dallas.
Taylor, D. D., superintendent distribution, Dallas Gas Co., Dallas.
Zeskey, C. R., district manager, Pittsburgh Equitable Meter Co., Kansas City, Mo.

WEST TEXAS WILDCATS

(Continued from Page 46)

Prairie O. & G. Co.'s No. 1 Colette, SW cor. Sec. 36, Blk. 31, University Sur. ..... Four bailers sulphur water per hour at 4,000 ft.; shut down 4-170 ft.; will plug and abandon.

Zweifel and others' No. 1 W. H. Cowden, SE SE Sec. 16, Blk. X, C. C. S. D. Sur. ..... Hole full sulphur water 3,050 ft.; shut down 3,301 ft.; flowing sulphur water.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. R. R. Sur. ..... Fishing bit 3,075 ft.

V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec 4, Blk. 2, I. & G. N. Sur. ..... Shut down for pipe 930 ft.

George A. Henshaw, Jr., No. 1 University, 1,320 feet from S and W. lines SW Sec. 5, Blk. 14, University Sur., elev. 2,297 ft. ..... Top salt 450 ft.; small show oil and gas 1,100-15 ft.; 300 ft. sulphur water 1,668 ft.; hole full sulphur water 1,725 ft.; total depth 1,867 ft.; underreaming 8-in.

J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur... Fishing for 18 joints 8-in.; total depth 2,535 ft.; shut down.

Magnolia Pet. Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur., elev. 2,670 ft. ..... Hole full sulphur water 2,390 ft.; small show oil 2,385-90 and 2,992 ft.; drilling 3,350 ft.

William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur., elev. 2,344 ft. ..... Total depth 2,344 ft.; plugged back to 2,208 ft.; shot 10 qts. 2,170-95 ft.; shut down.

William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, Univer. Land.. Rig.

W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 156, Blk. O. G. H. & S. A. Sur., elev. 2,105 ft. ..... Rainbow show 454 ft. and 540 ft.; drilling 1,240 ft.; lime.

P. H. Williams' No. 1 L. P. Powell ..... Drilling 675 ft.

World Oil Co.'s No. 1 Schneeman, N and W SE cor. Sec. 57, Blk. BB, G. C. & S. F. Sur., elev. 2,679 ft. ..... Top salt 1,035 ft.; sulphur water 2,490 ft.; total depth 2,575 ft.; pipe parted.

Young & Cromwell's No. 1 University, C SE Sec. 23, Blk. 31, University, elev. 2,395 ft. ..... Pay 1,160-65 ft.; shows at 1,505 and 1,574 ft.; hole full sulphur water 1,930 ft. and 1,962 ft.; drilling 2,000 ft.

CROSBY COUNTY

El Capitan Oil Co.'s No. 1 O. L. Slaton, NW cor. SW Sec. 5, Blk. B-9, E. L. & R. R. Sur. ..... Drilling 3,150 ft.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur. ..... Shut down 400 ft.

DICKENS COUNTY

Bowser Mickels and others' No. 1 Pitchford ranch..... Shut down 3,250 ft., contract depth; may deepen.

Moutray Oil Co. and Clancey & English's No. 1 Blackwell, C SE Sec. 406, Blk. 1, H. & G. N. Sur. ..... Shut down 3,509 ft.

Moutray Oil Co. and Clancey & English's No. 1 Jones, SE cor. NW Sec. 311, Blk. 1, H. & G. N. Sur. ..... Shut down 3,550 ft.; to deepen.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, Blk. B-16, School Land..... Drilling 690 ft.

J. S. Cosden et al's No. 3 G. W. Connell-A ..... Rig.

Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Sur., T-1-S ..... Shut down for orders 4,435 ft.

FISHER COUNTY

Barber Oil Co.'s (was Mason Oil Co.'s) No. 1 W. A. Cross.. Drilling second hole 1,600 ft.

California Co.'s No. 1 R. G. Anderson, Sec. 22, Blk. 20, T. & P. Sur. ..... Hole full sulphur water 2,500 ft.; salt water 2,801-12 ft.; hole full salt and sulphur water 3,118-20 ft. and 3,208 ft.; drilling 3,270 ft.

California Co.'s No. 1 Maggenheimer, SE cor. SW Sec. 15, Blk. 1, H. T. & B. Sur. ..... Hole full sulphur water 2,826-2,937 ft.; hole full water 2,975-3,000 ft. and 3,055-70 ft.; shut down for orders 3,550 ft.

Danciger Oil & Refg. Co.'s (F. P. Zoch and others') No. 1 Lanius, NE cor. SE Sec. 15, Blk. Y, T. & P. Sur..... Drilling 3,525 ft.

Fred Phillips' No. 1 C. M. Webb, 756 ft. S and 1,050 ft. W NE cor. Sec. 2, Blk. K ..... Hole full salt water 2,220-40 ft. and 2,637 ft.; shut down 2,715 ft.

Hucony Gas Co.'s No. 1 Langford, SW SW Sec. 7, Blk. 21, T. & P. Sur. ..... Small show oil 2,350 ft. and 2,808-09 ft. and 2,826-27 ft.; no gas; set 6-in. 2,728 ft.; small show oil 2,947-50 ft.; shut down 3,187 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur. ..... Drilling 500 ft.

Marland Oil Co.'s (was Caldwell and others') No. 1 Rochelle, SW cor. NE Sec. 184, Blk. 3, T. & P. Sur.. Hole full salt water 3,565-80 ft.; drilling 3,580 ft.

Marland Oil Co. and Texon's No 1 McCall..... Rig.

R. W. Raney's No. 2 Maberry ..... Shut down for orders 2,725 ft.

Sinclair Oil & Gas Co.'s (was Bourbon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. ..... Drilling 570 ft.

Stearns & Streeter's No. 1 W. A. Howe, N and E SW cor. NE Sec. 12, Blk. 23, T. & P. Sur. ..... Shut down 3,185 ft.

F. P. Zoch and others' No. 1 R. M. Clayton, C of W 160 acres of R. M. Clayton Pre-emption Sur. ..... Odor gas 2,681-2,707 ft.; hole full salt water 2,712-55 ft.; sulphur water 3,090 ft.; show gas in black lime 3,128-32 ft.; black and gray lime 3,152-55 ft.; rainbow show and strong smell gas; drilling 3,687 ft.

FOARD COUNTY

Humble O. & R. and Navarro Oil Co.'s No. 1 L. McAdams, C S ½ Sec. 27, Blk. L, S. P. Sur. ..... Shut down for gas 2,466 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur. ..... Small show oil in gray lime 1,884-1,902 ft.; shut down 2,212 ft.

Pandem Oil Co.'s No. 1 Justice, SW cor. NW Sec. 2, Blk. 6, H. & G. N. Sur. ..... Rig.

GLASSCOCK COUNTY

Green et al's No. 1 F. G. Oxsheer..... Shut down 200 ft.

World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Twp. 2-S, T. & P. Sur., elev. 2,553 ft. ..... Building rig.

R. R. Penn et al's No. 1 W. P. Edwards, C SE Sec. 11, Blk. 34, Twp. 2-S, T. & P. Sur. ..... Building rig and rigging up.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. — Spudded and shut down.

HOCKLEY COUNTY

El Capitan Oil Co.'s No. 1 Ellwood, SW cor. Sec. 55, Blk. A, R. M. Thompson Sur., 18 miles NW of Lubbock — Drilling 1,000 ft.

HOWARD COUNTY

Bowers et al's No. 1 Chester Jones, C SW Sec. 32, Blk. 27, T. & P. (3,200-ft. test) — Spudded and shut down.

Fred Carey et al's No. 1 G. O. Chalk, SE NW Sec. 124, Blk. 29 — Shut down 250 ft.

Donoliee et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2-N, T. & P. Sur. — Drilling 1,350 ft.

Francis & Brunson's No. 1 J. W. Furrh, C SW Sec. 11, Blk. 31, T. & P. Sur., T-1-S — Location.

F. H. E. Oil Co.'s No. 1 John Roberts — Machine; spudding.

Godley Oil Co.'s No. 1 A. J. Hooks — Building rotary rig.

Marland Oil Co.'s No. 1 J. B. Harding, C SE Sec. 19, Blk. 33, T. & P. Sur. — Drilling 2,660 ft.

L. C. Harrison et al's No. 1 Dora Roberts — Shut down 700 ft. repairs.

Marland Oil Co. & Zoch's No. 1 Guitar Est. No. 1 — Spudded and shut down.

Midwest Exploration Co.'s No. 1 H. R. Clay — Drilling 500 ft.

HARDEMAN COUNTY

Murchison Oil Co.'s No. 1 Ayres — Pulling pipe to abandon 3,000 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 — Spudded and shut down.

IRION COUNTY

Cash Dollar et al's No. 1 Abe Mayer, C NE Sec. 1, Blk. 10, S. P. R. R. Sur. — Total depth 2,500 ft.; pulled 8-in. to straightream.

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur. — Shut down 1,085 ft.

JEFF DAVIS COUNTY

Humble O. & R. Co.'s No. 1 Crecencio Flores, Sec. 34, Blk. 58, T. & P. Sur. T-8 — Rigging up.

J. K. Hughes Dev. Co.'s No. J. Z. Means, 600 ft. from N line and 2,000 ft. from W line of M. Robinson Sur. No. 1 — Shut down 1,970 ft.

JONES COUNTY

Atlantic O. P. Co. and Landreth's No. 2 Howell — Drilling 2,630 ft; missed regular pay.

Bateman & Campbell's No. 1 Southard, C NW NW Sec. 43, Deaf & Dumb Asylum Lands — Shut down; fishing tools 1,990 ft.

Midwest Exploration Co.'s (was Campbell et al's) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft. — Shut down 1,860 ft.

Consolidated Oil Co.'s No. 1 Armand & Taylor, C S½ SW Sec. 7, Blk. 4, H. & T. C. Sur. — Hole full salt water 1,470-90 ft.; underreaming 1,940 ft.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands — Location.

Gault Brown et al's No. 1 Mrs. A. Zips, NE cor. NW Sec. 24, Blk. 14, T. & P. Sur. — Drilling 1,320 ft.

Gibson & Johnson's No. 1 Largent, C SE Sec. 50, Blk. 149, Dewitt Co. School Land — Shut down 2,560 ft.

Gillette & Hickey & Cowboy Evans' No. 1 S. W. King, Manuel Bueno Sur. No. 197 — Good show oil 2,070 ft.; no gas; swabbed 10 bbls. oil and 30 bbls. water; shut down for orders 2,090 ft.

Gillette & Hickey's No. 1 M. E. Young, Tevanio Sur. No. 190 — Shut down 1,200 ft.

Grisham & Hunter & Wildman's No. 1 Mrs. F. G. Phillips (was Birchfield), 1,371 varas from S line and 2,720 varas from W line, Harrison Co. School Land No. 333 — Rainbow showing 2,758-65 ft. 2,815-25 ft. and 2,860-70 ft.; hole full salt water 2,970 ft.; fishing casing 3,000 ft.

Grisham & Hunter & Wildman's No. 1 Williams, Harrison Co. School Land, elev. 1,732 ft. — Brown sand 2,620-40 ft.; tested 4 bbls. oil and 3 bbls. water; drlg. 2,680 ft.

Hart & Cole's No. 1 Cranston, Sec. 10, Blk. 17, T. & P. Sur., elev. 1,701 ft. — Hole full salt water 2,650 ft.; drilling 3,105 ft.

Hurley Oil Co.'s No. 2 John Sears — Hole full salt water 2,000 ft.; 2 bailers oil 2,496-99 ft.; went out of lime 2,510 ft.; shut down 2,515 ft.

Hutson & Weaver's No. 1 Smith, Sec. 51, Blk. 18, T. & P. Sur. — Shut down for fuel 700 ft.

Kirk & Brewer's No. 1 J. H. Milsap, Justo Rodriguez Sur., League 357 — Drilling 1,350 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. — Drilling 2,390 ft.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 — Drilling 1,040 ft.

Mid-Continent Petroleum Corp.'s No. 1 H. Evans, NE cor. SE SE Sec. 44, S. P. R. R. Sur. — Shut down for water 2,360 ft.

Victor H. Martin's No. 1 Culbertson, Vincent Bell Sur. No. 6, elev. 1,678 ft. — Shut down for orders 3,240 ft.

Phillips Pet. Co.'s No. 1 Thornton — Six bbls. water 1,930-45 ft.; Total depth 2,826 ft.; pulling pipe, tools hung.

Shaw & Rathke and others' No. 1 Bristow, SE SE Sec. 1, J. H. Gibson Sur. — Shut down 500 ft.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 — Total dept 730 ft.; rigging up.

Stebbins Oil Co.'s No. 1 J. M. Higgs, Sec. 30, W. T. Scott Sur., elev. 1,624 ft. — Top Sedwick lime 1,265 ft.; swabbed 35 bbls. 1,599-1,604 ft.; now 1,100 ft. oil in hole; equipping to pump.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands — Drilling 1,120 ft.

Tomberlin et al's No. 1 Oscar Clapp, CSL SW Sec. 37, Blk. 16, T. & P. Sur. — Machine.

World Oil Co. and others' No. 1 A. W. Clark, SE cor. Sec. 15, Blk. 19, T. & P. Sur., elev. 1,839 ft. — Hole full salt water 1,975-2,010 ft., more salt water 2,305 ft.; slight show oil 2,425-36 ft. and 2,660-70 ft.; hole full sulphur water 2,930 ft.; drilling 2,940 ft.

World Oil Co.'s No. 1 Boyd (was W. H. Lee), 12,700 ft. N and 2,130 ft. E of SW cor., Samuel Jones Sur. No. 266, elev. 1,729 ft. — Drilling 2,200 ft.

Zeigler and others' No. 1 Reeves, C SE SE Sec. 164, B. B. B. & C. Sur. — Shut down 1,750 ft.

KENT COUNTY

Douglas Oil Co.'s No. 1 Scoggins — Shut down 1,050 ft.

Marland Oil Co. and Texon O & L Co.'s No. 1 Bilby — Location.

KING COUNTY

Gilson & Johnson — Drilling 650 ft.

Midwest No. 1 Patton — Spudded 100 ft.

J. L. Pattison No. 1 Patton — Fishing 1,300 ft.

Phillips Petroleum No. 1 — Drilling 1,525 ft.

Sinclair — Spudded 100 ft.

White Eagle No. 1 — Drilling 1,155 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Jones, CSL Sec. 111, Blk. C, H. & T. C. Sur. — Drilling 2,350 ft.

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft. — Drilling 2,180 ft.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. south and 2,590 ft. west of NE cor. Sec. 31, Blk. 4 — Cable tools; drilling 955 ft.

Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T. & B. Sur. — Rigging up standard tools.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. G-26, Pub. Sch. Ld. — Moving in tools.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur. — Shut down 150 ft.

LUBBOCK COUNTY

Sam Arnett and others' No. 1 Bowles Ranch — Shut down 400 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2 — Shut down 1,400 ft.

And Now

a tool that

Pulls Standing Valves Every Time

(even if completely buried in accumulated sand, lime, gyp, scale, mud or all of these)—

and Cleans the Working Barrel Besides!

The Nor-Bro Spiral Working Barrel Cleaner and Standing Valve Tap is Norris Brothers' latest contribution to oil production. Lowered into the hole (without turning), the spiral flanges scrape the working barrel wall clean of all foreign matter. Reaching bottom, and slowly turned, the tool digs into the accumulated matter on top of the standing valve and holds it in suspension while the tap screws into and pulls out the valve—without the wedging action that would otherwise take place.

The Nor-Bro Spiral Working Barrel Cleaner and Standing Valve Tap is made of high carbon alloy tool steel, heat treated to an exact temperature and accurately finished. It is unconditionally guaranteed. You may order direct from Robinson or through our Fort Worth branch.

NORRIS BROTHERS, Inc.

ROBINSON, ILLINOIS
and
FORT WORTH, TEXAS

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur. — Shut down 415 ft.
Clark and others' No. 1 Klothman, NW NW Sec. 77, Kulman Sur. — Shut down 580 ft.

MITCHELL COUNTY

California Co.'s No. 1 E. Morrison, Lease 1 — Drilling 2,560 ft.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur. — Shut down 125 ft.
Robert Thraves' No. 1 C. Way — Rig.
Paul Teas' No. 1 Ed Strain — Shut down 1,600 ft.
Morrison & Thompson's No. 1 Griffith, SE SE Sec. 45, Blk. 29, T. & P. Sur., T-1-N — Drilling 2,310 ft. Small show oil in sandy lime 2,715-20 ft. and 2,750-55 ft.; drlg. 2,830 ft.

B. E. Walter and others' No. 1 J. E. Dollen, NW cor. SW Sec. 11, Blk. 27, T. & P. Sur. — Shut down 3,955 ft.; hole full sulphur water.

J. C. Yancey's No. 1 Saunders, 400 ft. N and 1,700 ft. E of SW cor. Sec. 25, Blk. 25, T. & P. Sur. — Spudded and shut down.

MOTLEY COUNTY

Chechaco Oil Co.'s (J. W. Pennington et al of Amarillo) No. 1 J. W. Owens, NW cor. Sec. 26, Blk. 4 (15,000-acre solid block) — Shut down 1,050 ft.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. — Rig on ground.

NOLAN COUNTY

A. G. Malone et al's No. 1 J. B. Carlyle — Location.
A. G. Malone et al's No. 1 M. C. McElmurry — Spudded and shut down.
J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth — Shut down 960 ft. for water.
Thomas & Reynold's No. 1 Allen, C. W. ½ NW Sec. 58, Blk. X, T. & P. Sur. — Drilling 1,720 ft.
Herbert Oil Co.'s (was McClenky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigged up and shut down.
Phillips Pet. Co.'s No. 1 Scott, Sec. 58, Blk. 21, T. & P. Sur. — Drilling 1,300 ft.
Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — Shut down 1,310 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell, elev. 4,005 ft. — Drilling 1,400 ft.

PECOS COUNTY

Arkansas Fuel Co.'s No. 1 H. Holmes, 2,040 ft. north and 1,520 ft. west SE cor. Sec. 16, Blk. 178, T. C. R. R. Sur., elev. 2,567 ft. — Top salt 640 ft.; drilling 1,200 ft
Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. N. Sur., elev. 2,556 ft. — Total depth 3,115 ft.; flowing sulphur water; rerunning 6-in.

Buell and others' No. 1 Batcheler, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft.; flowed sulphur water 1,775 ft.; repairing engine 2,045 ft.

Buell & Hagan's No. 1 McKenzie, Sec. 8, Blk. 604, Mrs. A. L. Canon Sur., elev. 3,009 ft. — Wait on 10-in. 725 ft.
Buell & Hagan's No. 1 University, C N ½ SE Sec. 31, Blk. 24, elev. 2,816 ft. — Top lime 1,935 ft.; bailed 1½ bailers live oil 2,460 ft.; plugging to abandon 3,008 ft. (corrected).

Buell & Hagan's No. 1 Jasper, 1 mile south and west NE cor. Jasper Co. School Land No. 104 — Location.
California Co.'s No. 1 Union Land Co., C NE NW NW Sec. 10, Blk. 141, T. C. R. R. Sur., elev. 2,615 ft. — Top salt 834 ft.; top dolomite 1,442 ft.; 2 bailers sulphur water per hour 1,550 ft.; sulphur water 1,737 ft.; flowing sulphur 1,740 ft.; shut down 1,752 ft.

Cromwell & Kimberlin's No. 1 Blackman, C NW Sec. 24, Blk. 3, H. & T. C. Sur., elev. 2,393 ft. — Top salt 890 ft.; shut down 1,400 ft.

Geo. A. Henshaw, Jr., No. 1 I. G. Yates, 330 ft. S and 1,650 ft. E of NW cor. Sec. 544, Blk. 1, I. & G. N. Sur. — Drilling 400 ft.
Humble O. & R. Co. and Kirby Oil Co.'s No. 1 J. T. McElroy, NW SW SE Sec. 124, Blk. 10, H. & G. N. Sur. — Rig.
Del Rio Drilling Synd.'s No. 1 K. C. & Ft. Stockton, C SW Sec. 19, Blk. 178, T. C. Sur. — Shut down 740 ft.
Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur. — Location.
Kershaw & Livingston's No. 1 Cannon, SW cor. NE Sec. 54, Blk. A-2, T. C. R. R. Sur. — Location.
Mid-Kansas O. & G. Co.'s No. 1 Smith Taylor — Drilling 200 ft.
Mid-Kansas O. & G. Co.'s No. 4 Yates A — Drilling 440 ft.
Mid-Kansas O. & G. Co.'s No. 1 Yates C (was No. 1 Acct. 3) — Drilling 320 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur., Ft. Stockton — Shut down 3,440 ft. (corrected).
Quinby Oil Co.'s No. 2 Bennett, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. — 200 ft. oil in hole from 1,216 ft.; shot 20 quarts 1,208-20 ft.; drilling 1,435 ft.

Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. north and 1,320 feet east SW cor. Sec. 593, Abst. 3,009 — Drilling 462 ft.
Texon O. & L. Co.'s No. 2 I. G. Yates — Drilling 400 ft.
Texon O. & L. Co.' No. 3 I. G. Yates — Location.
Texon O. & L. Co. and Marland Oil Co.'s No. 1 Blakesley — Drilling 365 ft.
John Droppiemann's No. 1 Mrs. L. Hershenson, Sec. 7, Blk. 51, T. & P. Sur. T-10 — Drilling 1,150 ft.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, F. & St. L., elev. 3,425 ft. — Moving in material.

REAGAN COUNTY

The Texas Co.'s No. 2 J. D. Sugg, C Sec. 87, Blk. 2, T. & P. Sur. — Top salt 860 ft.; top lime 2,110 ft.; hole full sulphur water 2,130-50 ft.; cased off 1,000 ft.; sulphur water 2,830-35 ft.; drilling 2,920 ft.

Tidal Oil Co.'s No. 1 University, NW cor. NE Sec. 20, Blk. 8 — Drilling 780 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell, C SW Sec. 22, Blk. 58, T. & P. Sur., Twp. 8 — Drilling 3,395 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Pub. Sch. Ld. — Spudded 20 ft. and shut down.
Humble Oil & Ref. Co.'s No. 1-B Kloh, C NE Sec. 47, Blk. 56, T. & P. Sur. T-2-S, elev. 2,781 ft. — 900 ft. sulphur water 1,760-1,800 ft.; drilling.

World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur., elev. 3,068 ft. — Drilling new hole 600 ft.

RUNNELS COUNTY

Associated Pet. Co.'s (was Bell & Moore's) No. 1 W. W. King, 1,200 ft. W of NE cor. Lge. 14, J. V. Cobrera Sur. — Spudded and shut down.
Moore & Bell's No. 1 Ferguson, 2,640 ft. S and 1,320 ft. E of NW cor. F. J. Ford Sur. No. 152 — Spudded and shut down.
Lou Ladd et al's (was Frank Yates') No. 1 R. M. McMillan — Small show oil and gas 545-62 ft. and 590 ft.; drilling 875 ft.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. — Spudded and shut down.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. — Spudded and shut down; drilling water well.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson, NE NW SW Sec. 101, Blk. 97, H. & T. C. Sur. — Tested 8 bbls. 1,745 ft.; another pay at 3,402-07 ft.; bailed 70 bbls. oil in 4 hours and bailed bbls. oil in 4 hours and bailed dry; drilling 4,150 ft.

STERLING COUNTY

J. P. Williams' No. 1 Clark, NE NE SW Sec. 7, Blk. 8, G. C. & S. F. Sur. — Drilling 950 ft.

STONEWALL COUNTY

McCamey & Zoch's No. 1 J. Ward, C SW Sec. 153, Mrs. Ward Dobbs Sur., 3 miles NW of Aspermont — Drilling 490 ft.

TAYLOR COUNTY

City of Abilene's No. 1 fee, NW SW SE Sec. 66, Lunatic Asylum — Shut down 2,364 ft.

Dorning & Perrine's No. 1 J. A. Hammer, center N 100 acres, Sec. 23, Blk. 19, T. & P. Sur.; elev. 1,904 ft. — Shut down 455 ft.
Gibson & Johnson's No. 1 Hendry — Drilling 1,080 ft.
Grisham & Hunter's No. 1 D. D. Huddleston, CWL Lot 29, League 146, Grimes Co. School Land — Small show oil 2,332 ft.; total depth 2,585 ft.; underreaming 6-in.

W. E. Halbert et al's No. 1 Hunt, C SE Sec. 124, Blk. 64, H. & T. C. Sur. — Drilling 1,565 ft.
Humble O. & R. Co.'s No. 1 Mattie Jacobs — Drilling 1,510 ft.
Midwest Explin. Co.'s No. 1 Dora Smith, Jose Gabo. Sur. — Drilling 1,780 ft.
Midwest Explin. Co.'s No. 1 Toombes, Alex Thompson Sur. No. 37 — Underreaming 1,780 ft.
Mitchell & Breene's No. 1 Tittle — Location.
Morrison & Thompson's No. 1 Mrs. Alice Rose, SW cor. NE Sec. 29, Blk. 19, T. & P. Sur.; elev. 1,925 ft. — Drilling 1,710 ft.
Owen & Sloan's No. 1 Lattimer — Shut down 635 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W ½ NW Sec. 64, Blk. 5, T. & P. Sur. — Shut down for fuel 710 ft.
Sanger O. & R. Co.'s No. 1 Ike Brown NE cor. Sec. 54, Blind Asylum Land — Fishing tools 1,900 ft.
Sanger Oil & Refining Co.'s No. 1 Gillespie, Sec. 7, Lunatic Asylum Land — Drilling 4,100 ft.
World Oil Co.'s No. 1 J. R. Griffith; SW cor. NE Sec. 32, Blind Asylum Land; elev. 1,747 ft. — Drilling 660 ft.

TERRELL COUNTY

E. T. Williams and others' No. 1 Robertson, C NE Sec. 71, Blk. D-10, T. C. Sur. — Drilling 3,000 ft.
Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M. K. T. Sur. (22 miles northeast of Sanderson) — Location.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. — Drilling 1,200 ft.

TOM GREEN COUNTY

Fitzgerald et al's No. 1 Bennett — Rig.
Marland Oil Co.'s No. 1 Llano, 3,500 ft. S and 13,000 ft. W of NE cor., Llano Co. School Land No. 964 — Drilling 1,250 ft.

UPTON COUNTY

Beaty et al's No. 1 J. F. Lane — Top salt 880 ft.; sulphur water 2,370 ft.; show oil 2,250-65 ft.; straightreaming 2,440 ft.

W. W. Donnelly and others' No. 1 University, C SW Sec. 21, Blk. 4, University — Top salt 1,560 ft.; drilling 3,110 ft.

Gulf Production Co.'s No. 1 J. T. McElroy-B, C SW NE Sec. 187, Blk. F — Top salt 1,220 ft.; total depth 2,821 ft.; cementing 6-in.

Hults and others' No. 1 Giddings, C Sub. Sec. 12, Throckmorton Co. School Land — Top salt 1,515 ft.; shut down 3,615 ft. for pipe.

Marland Oil Co.'s No. 3 Burleson, T. C. Jones Sur. No. 100 — First pay 2,205 ft.; second pay 2,295 ft.; 2,000 ft. sulphur water 3,390-95 gt.; 1,000 ft. sulphur water 4,135 ft.; total depth 4,280 ft.; straightreaming.

Marland Oil Co.'s No. 34 Burleson, Sec. 100, T. C. Jones Sur. — Shut down 3,255 ft.
Marland Oil Co.'s No. 3 Benton Land, Julia Prater Sur. No. 1 — Shut down 515 ft.
Prairie O. & G. Co.'s No. 1 Lane-C, NWC SW SW Sec. 3, G. C. & S. F. Sur. — Top salt 465 ft.; show oil 1,840 ft. and 1,845 ft. and 1,867 ft.; drilling.

Sartain & Davis No. 1 Bull, SW NE Sec. 48, Blk. 41, T. & P. Sur. — Rig burned 3,290 ft.; rebuilt.
Snowden & McSweeney's No. 1 E. S. Hughes, NW cor. their 80 acres in Sec. 4, William Teer Sur. — Top salt 585 ft.; show oil 2,222-27 ft.; drilling lime 2,255 ft.

VAL VERDE COUNTY

A. Blume and others' No. 1 Moore estate, Sec. 183, J. Mitchell Sur. — Shut down 3,000 ft.
Curseo Williams' No. 1 Hinman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. — Fishing tools 2,600 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 82, Blk. A, I. & G. N. Sur. — Drilling 2,430 ft.
East Del Rio Oil Co.'s No. 1 Russell, E cor. Sec. 183, Del Rio Town Sur. — Shut down 3,142 ft.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. — Hole full salt water 2,455 ft., fishing 8-in. 2,585 ft.

Independent O. & G. Co.'s No. 1 Whitehead, Sec. 81, Blk. D, G. C. & S. F. Sur. — Rig.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. — Drilling 3,900 ft.
O. O. Owens' No. 1 Mills — Drilling 1,540 ft.

WARD COUNTY

Marland Oil Co.'s No. 1 J. Sealey, C SE Sec. 78, Blk. A, G. M. M. & A. Sur.; elev. 2,820 ft. — Hole full fresh water 970-80 ft.; top salt 1,100 ft.; drilling 2,820 ft.

WINKLER COUNTY

Champlin Drilling Co.'s No. 1 C. W. Cowden, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld., elev. 2,889 ft. — Drilling 907 ft.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 26, Blk. 27 — Drilling 300 ft.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, S and W NE cor. W ½ NE Sec. 33, Blk. B-5, Public School Land — Rig.
Independent Oil & Gas Co.'s No. 1 Hendricks, Sec. 42, Blk. B-5, Pub. Sch. Ld. — Top of lime 2,720 ft.; first gas 2,797 ft., 3,000,000 ft. at 2,815 ft.; started spraying oil 2,824 ft.; set 6-in. 2,825 ft.

Llano Oil Co.'s No. 1 Scarborough, center Sec. 1, Blk. C-22, Pub. Sch. Ld., elev. 2,921 ft. — Top salt 1,115 ft.; hole full water. 1,321 ft.; 10-in. set 1,570 ft.; drilling 2,575 ft. salt water and anhydrite.

McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. — Set 10-in. 1,420 ft.; drilling 1,675 ft.

L. D. Ladd, Hill and others' No. 1 Amburgey, C NW Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur., elev. 3,033 ft. — Top salt 1,220 ft.; top lime 3,365 ft.; total depth 3,447 ft.; rig burned.

R. S. Matthews and others' No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur, elev. 3,120 ft. — Second hole 200 ft.; shut down.
Pure Oil Co.'s No. 1 Hendricks, SW cor. Sec. 41, Blk. B-5, Pub. Sch. Ld. — Drilling 420 ft.
Skelly Oil Co.'s No. 1 M. M. Leeman, 1,320 ft. east of SW cor. Sec. 21, Blk. 75, elev. 2,951 — Top salt 1,167 ft.; drilling 3,100 ft. in salt.

Southern Crude Oil Purchasing Co.'s No. 1-C (was No. 2) Hendricks, NE cor. Sec. 33, Blk. B-5, Public School — Top salt 1,910 ft.; top pay 2,915 ft., started flowing at 2,924 ft.; flowed 1,104 bbls. April 13; 917 bbls. April 14; 777 bbls. April 15; gravity 28.8° at 64; will deepen.

Southern Crude Oil Purchasing Co.'s No. 2-C (was No. 3) Hendricks, Sec. 33, Blk. B-5 — Top salt 1,901 ft.; standardizing 2,553 ft.
Southern Crude Oil Pur. Co.'s No. 3-C Hendricks, SE cor. NE Sec. 33, Blk. B-5 — Drilling 1,770 ft.
Southern Crude Oil Pur. Co.'s No. 1 T-67 Hendrick-A, SE cor. Sec. 42, Blk. B-5 (discovery well) — Top pay 2,997 ft.; total depth 3,049 ft.; will set string of 5-in and make deep test; averaged 360 bbls. past week.

Southern Crude Oil Pur. Co.'s No. 1 Hendricks-B, SE cor. NE Sec. 44, Blk. 26 — New location; drilling 680 ft.
Texon O. & L. Co.'s No. 1 Central State Bank, SW cor. W ½ SE Sec. 41, Blk. B-5 — New location; building rig.
White Eagle O. & R. Co.'s (was Gibson & Johnson's) No. 1 R. A. Lock, 1,320 ft. west of NE cor. Sec. 30, Blk. 74, northwest of discovery well — Rig.

FORESEES UPHEAVAL IN MARKETING OIL

(Continued from Page 39)

when they came to sell out they found that good will which should have been a tangible asset to them was really a tangible asset to the supplier.

Mistakes Made

The conditions we are facing today are perhaps a very natural result of the unprecedented growth of the industry—of the ever-mounting demand for gasoline, oil and service. Today we are reaching a more settled state of affairs and while we have made a lot of mistakes they are not impossible to overcome. Under present conditions I can see a lot of difficulties ahead of us, but at the same time I can see unusual opportunities.

We know that the big companies are reaching out for the control of as many filling station outlets as possible, but I do not believe this need either affect or worry the truly independent operator, who injects into his business sound business principles, his own individuality quality merchandise, backed up with sound courteous service.

I do not believe you can force people to buy something they do not want simply because there may be innumerable places where such products can be bought. We can get more business in gallonage from our present stations and save our money to add more facilities as the business grows. We can by sound merchandising principles cause more motorists to seek our places of business and do much to discourage the habit of buying for convenience. This can all be done and done very easily.

It can be done by putting ourselves in a position to buy and sell such products as we know will give our customers full value for every dollar they spend with us. It can be done by adopting a definite policy. It can be done by doing more for ourselves in the future and asking the other fellow to do less. It must be admitted that we have all been a bit spoiled. We were able to obtain equipment and very often get the other fellow to assume a good part of our building expense.

We in turn as we broadened out passed on this equipment idea and building idea to the other fellow, so it was almost always a case of giving our business to the fellow who would do the most for us, and very little thought, if any, was given to the kind of merchandise that came with this service.

Future Growth

Now all of these things are fine, but are they the kind of things that are going to dominate our future growth? Are they going to carry us on indefinitely and enable us to find a strong foothold in this big market, with the basis for an ever-increasing business?

In your midst you have some filling station operators who are up on their toes—who have learned and are putting into effect sound and unselfish merchandising principle and incidentally this word "merchandising" has been so much talked about that some people think it is a kind of trick word that requires an unusual amount of intelligence and ingenuity.

Let me say right here that merchandising is about the simplest possible thing that could be injected into your business. It simply means having merchandise that you can talk about—teach your employes to talk about—and ask the public to buy. What this business needs is more selling and less serving. Remember, that I said service alone will never build a business, but intelligent buying and intelligent selling will.

Ratio of Gasoline to Oil

One filling station operator that I know very well checked up his January sales and found his ratio of gasoline to oil was 17 gallons of gassoline to one quart of oil. To this man who had always been an advocate of merchandising principles the ratio was unreasonable He called many meetings of his employes. He educated them on the selling talks of the merchandise he was handling—and he started them out on a definite program of asking the motorist to buy.

When a car drove into the station the customer was not always allowed to dominate the amount of the purchase. The filling station salesmen were on the job and waiting. If the customer would ask for 5 gallons of gasoline, he was politely told by the attendant after the 5 gallons were put in the car that the tank would hold 3, 4, 5 or even 10 more gallons and he might as well get it now and save himself another stop within the next day or two

His oil was properly gauged with a polite "I just want to make sure you have enough oil" and the way the remark was phrased it put the burden on the motorist. This method added many additional gallons of gasoline and many additional quarts of oil.

This man found a large percentage of the cars driving into his station came in for tire service. They wanted air. The facilities for supplying air were all conveniently available to the motorist, but he was not left to his own devices. The salesman was immediately on the job, assisting quietly and courteously and with full knowledge of the air pressure that was required for the various size tires. When rendering this service he took occasion to look at the gasoline tank and with the remark: "Are you sure you have enough oil?" examined the oil gauge.

This simple formula invariably resulted in the motorist moving his car from the air pump to the gasoline and oil pumps. Again one more simple thing added much in the way of profits.

Valve Core Leaks

Each sales attendant was equipped with a small supply of the little tire valve cores and as each tire was completed the valve was tested for leaks. If a leakage was found the attendant remarked: "The reason this tire was down is because your valve core leaks." Then: "If I can fix it I will and if not I will put in a new one, but as you know this cannot often be done." If after making an honest effort it could not be fixed, he stated that fact to the motorist, saying: "If you will take one out of this little box I will put it in for you," handing the little box to the motorist. After putting in the new valve core and reinflating the tire: "This may happen to you some time when you are not near a station. This little box of valve cores cost a quarter and you might as well put it in your vest pocket."

This little process sold more boxes by far in the first two months of 1927 than were sold throughout the year of 1926.

I am speaking about the L. V. White Co. at Kalamazoo and Mr. White personally told me that the sale of valve cores would add $125 to his net profits in 1927. Now, remember, I told you that Mr. White's ratio of gasoline in January was 17 gallons to 1 quart of oil. In February this was brought down to 7 gallons of gasoline to 1 quart of oil and his total business increased tremendously. In March it was further brought down to 5.51 gallons of gasoline to 1 quart of oil and these stations are enjoying a volume of business greater than ever before.

Sound Principles

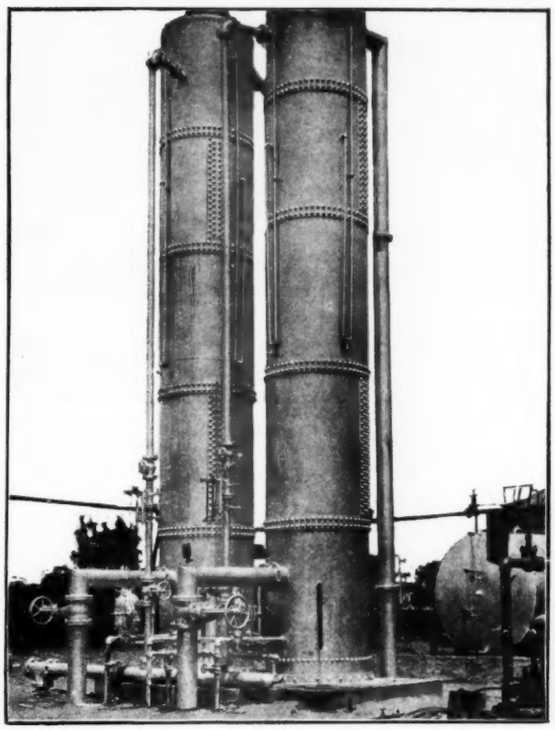
Quality merchandise, conveniently available and attractively displayed and backed up with sound merchandising principles. As in every other line of business, oil stations founded on the right principles and backed up by the right kind of merchandise and service are going to do well in business in the future.

Those who are going to continue their indefinite business policy of the past are going to find it increasingly difficult to retain their standing in the market.

I am not particularly advocating the addition of accessories to service stations, but it is sound merchandising and rendering a service to motorists that will not soon be forgotten and such acts do much to establish buying habits and make regular customers out of former shoppers.

I might add that many sales opportunities are lost by neglect when motorists are in the most favorable position to buy. The transmissions and dif-

SOUTHWESTERN ABSORPTION TOWERS



SOUTHWESTERN Absorption Towers are designed for sustained intimate contact of the oil and gas which circulate in counter currents through the tower.

. . . The bubble trays have a patented equalizing feature which prevents short-circuiting. The gas orifices are constantly sealed by a body of absorption oil.

Complete Information On Request.

SOUTHWESTERN ENGINEERING CORP.
1221 HOLLINGSWORTH BLDG.
Los Angeles, Calif.

Branch
Joplin National Bank Bldg.
Joplin, Missouri

Branches
Western Bldg., Amarillo, Tex.
Mayo Bldg., Tulsa, Okla.

and
190 WEST STREET, NEW YORK CITY

18 REASONS *for Using*

ECLIPSE SAVE-A-LINE

THE large pipe line and gas companies are notoriously shrewd buyers—they are influenced solely by FACTS—the facts of actual performance.

Therefore, when considering and testing Pipe Coatings, the selection of ECLIPSE "Save-A-Line" by the following 18 large pipe line and gas companies, is disinterested evidence of its superiority in endurance and protection:—

Associated Pipe Line Co.
California Petroleum Co.
Coast Counties Gas & Electric Co.
Community Natural Gas Co.
Empire Natural Gas Co.
Gulf Pipe Line Co.
Hall & Briscoe
Hope Engineering & Supply Co.
Houston Gulf Gas Co.
Humble Pipe Line Co.
Indian Territory Illuminating Oil & Gas Co.
Lone Star Gas Co.
Municipal Gas Co.
New York State Gas & Electric Corp.
Provincial Natural Gas Co.
Public Service Electric & Gas Co.
Shell Co. of California
Wilmington Gas Co.

They are now using it regularly. The total of their orders last year ran into hundreds of carloads.

This tough, elastic, non-cracking, non-peeling, heavy filmed coating, ECLIPSE "Save-A-Line," requires no heating and can be applied just as it comes from the package. This eliminates fire hazard and also possible injury to the workmen who handle hot materials. Covers approximately 140 square feet to the gallon.

Let us figure on your requirements. We will be glad to send you sample and quote you prices. Write us.

The Eclipse Paint & Mfg. Co.
Cleveland, Ohio, U.S.A.

Dallas Tulsa Philadelphia San Francisco
Denver Newark Pittsburgh Charlotte, N. C.

ferentials on cars are invariably overlooked.

The L. V. White Co.'s grease sales dropped rather low. I do not know what they are today, but I do know that after the two months of effort they have been brought up to an average of 50 pounds of grease per day per station.

Now, somewhat like the rooster who rolled the ostrich egg up in front of the hen house, I do not want to criticize, but I do want to let you know what others are doing.

Attention to Employes

The big companies today are giving increased attention to their employes. They realize as some of us have not that employes can make or break any establishment. The employes of 24 large corporations in the United States, several of which are in the oil industry, show an average ratio per cent to all stockholders of nearly 25 per cent, with the market value of their holdings nearly $500,000,000 and an average of 5 per cent of the total stock issued. The employes of the Standard Oil Co. of Indiana represent 34 per cent of the total stockholders.

By such methods do big corporations build an employe structure that goes far toward establishing loyalty and enthusiasm and the right spirit and attitude toward their employers.

Some independents are following this policy by first establishing a definite line of overhead and knowing exactly what each station must do to return a profit to its owner and then to stimulate the plus business they share the plus profits with their employes. Personally, I feel that the employes of the filling station are the most generally overlooked individuals in the oil industry, but let me say that in my opinion your employes will be the greatest potential asset you have.

Only too often I have heard the remark by a filling station employe: "If my boss would only tell me about the products we handle I think I could sell more oil and gasoline."

Road Service

Service station operators in my opinion can do much to further the interests of each other. Only too often when touring one stops at a service station and asks road directions. He will ask how many miles it is to a certain town and invariably the fellow you ask shouts to someone else: "Hey, Bill, how many miles is to to ————?" and Bill answers: "I think it's about 15." Anway, the inquirer is left with a rather hazy idea of what he wanted to know.

How simple it would be for the independent operator to establish a road service when located in towns of any size—to have a small map at each station showing the main highways and particularly mark on this map the streets of the town that lead into these highways. The tourist is not always the fellow who has the family with him and two or three tents and kitchen stove and other things tied on his car. Touring is an accepted practice.

People are going and coming all the time. These represent a very large potential business and if the filling station men would spend some time cultivating them—making sure they were given prompt and efficient service plus quality products and even would stop to ask them where they were going and if it were within the state to be able to say: "When you get there stop at Bill Jones' place, he will take good care of you."

As members of this association such a plan could very well be put into effect and one could pass on customers to another.

Salesman or Attendant

Today, however, I am afraid it is a well-established fact that if you want courteous service and reliable road information, stop at a major company station. Your employe is not by any means an attendant. Too often we have hired men because we felt that they could serve as good as anyone else. Only too often they lacked ordinary intelligence or intelligence below the average. More care in selecting these men and far greater care in educating them after you hire them will do much to establish more gallonage from your present station.

Not filling station attendant—but filling station salesman.

And, incidentally, not service stations—but oil and gasoline sales stations.

Show an interest in your employe. Educate him. Tell him honestly why you handle certain lines of merchandise and what those lines of merchandise will do for the purchaser. Knowledge given to your employes is the greatest investment you can make.

Knowledge creates enthusiasm. Every man likes to talk enthusiastically about a subject he knows well and knowledge and enthusiasm create the kind of spirit that will make your employes defend your product and defend your policies—and to further your best interests. Make them proud of the connection that they have made and make it possible for them to share with you the responsibilities for building a bigger and better business.

Your employe's attitude toward your customers is very vital.

Remember that he is your company to the man he is selling.

His attitude toward the motorist will create either a favorable or unfavorable impression upon the motorist. Motorists will go any distance to get good merchandise quickly and conveniently and courteous service.

Let's not be satisfied with the small successes that have characterized our growth to some extent so far, but let's strengthen and preserve the good will of the motorist, who stops at our places of business. However, let's exercise more concern over those that do not stop and let's set up a mark for our filling station salesmen. Let them know what we are doing.

Let them know the volume of business necessary to return a profit and let's make it an incentive for them to increase that volume of business every week and every month throughout the year. Employe indifference is fatal. Get your men working together, inspired by knowledge—inspired by enthusiasm and by your treatment—by the example you set for them. Create the will to do and desire to succeed, because in their success you will find a greater success than perhaps you ever thought was possible.

Don't try to lead the public, or rather, mislead the public by giving them too much attention and too much courtesy while you are giving them a product of doubtful value because the returns to you are a few pennies more on the individual sale.

It is turnover in business that counts. The concern succeeds who can build up the greatest number of satisfied customers because without satisfied customers we cannot hope to exist.

Your employes are paid on a daily or weekly scale. You pay them whether they work or not. There is a trend toward higher grade products in every line. The American public always has and always will be willing to buy something better than it asks for, and above all things, be very sure you are right before you attempt to supply a demand for one article with another.

You may make that sale, but will you make the next one?

Fixed buying habits of the public should be reckoned with because no man likes to be told that the article he has been buying is an inferior article. The satisfaction and confidence of your customers and the right spirit of your employes will carry you through.

You can educate the American public to higher quality buying, but never can you educate them to lower quality values.

The public is king.

ACCURACY NEEDED IN CALCULATING OUTAGES

(Continued from Page 86)

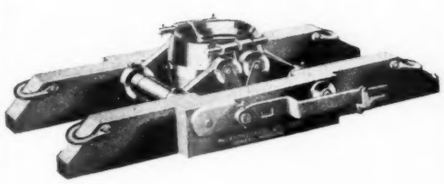
wire or phone the shipper before you unload.

3. If you receive a car not of the same number as one shipped you, indicating that contents have been transferred from one car to another in transit, never touch

SEVERAL LARGE Producing Companies and most of the smaller ones, in the Mid-Continent Fields, have ordered that no casing 10inch or smaller, shall be run or pulled before the well has been equipped with a

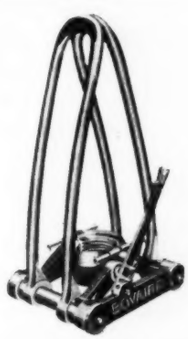
BOVAIRD Grip CASING ELEVATOR and SPIDER

BOVAIRD



CASING SPIDER

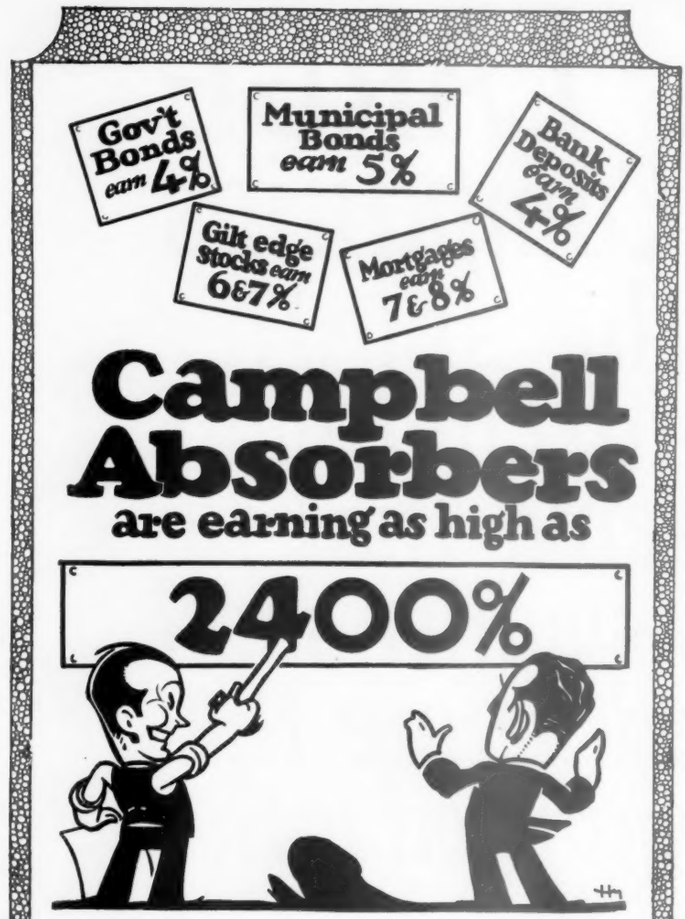
BOVAIRD CASING ELEVATOR



SUPPLY BOVAIRD COMPANY

BOVAIRD ELEVATORS *and* BOVAIRD SPIDERS *are* RUNNING *and* PULLING MATES

BOVAIRD *a good name to tie to-*



Investments

are made to earn money. An 8% earning is considered a good return upon money invested in safe securities—but Campbell Oil-Froth Absorbers are earning as high as 2400%. That sounds almost unbelievable but it's a fact, supported by actual production records in various gasoline plants. It is not unusual for a Campbell installation to repay its initial cost within a month. Some of our installations have paid out within two weeks.

J. A. Campbell

CONSULTING—DESIGNING—CONSTRUCTING

Natural Gas Engineer

P. O. Box 669 LONG BEACH, CALIFORNIA

CAMPBELL
OIL FROTH
absorber

such car without first wiring or phoning the shipper for instructions and before unloading see that the contents are water white and up to specifications in every respect and if not don't unload until proper notations are made by the railroad and you are notified to unload by the shipper.

4. Don't claim an outage until you have had the figures checked by at least two of your people.

5. Don't unload the car until you receive wire or telephone authority or until the shipper has given you verbal authority through one of his representatives who may inspect the car. Do not make a claim unless you notify the shipper that you have waited too long, in which case the chances are that he will give you authority, even though he may have wanted to inspect.

6. Don't make a claim for less than 50 gallons. Fifty gallons often is only one-half of 1 per cent of the contents of most cars and with the tables and methods in use which, at best, are only fairly accurate, one-half of 1 per cent is only a small variation. Also some cars figure over slightly, some more than slightly and you do not give the shipper credit in such cases, so you can figure that you are getting what you pay for in the long run if you place claims for only 50 gallons or more.

7. Send in your outage claims at once. Be sure that the freight added is figured at the correct rate. If there is a freight equalization on the invoice because the car was shipped from one group and sold f. o. b. another, take that into consideration. Some consignees hold their claims for months. Don't be one of them and cause a lot of extra work and bookkeeping.

8. See that your affidavit is made out correctly and signed by a notary. See that the outage and temperature are shown exactly the same as you reported when you made your original claim. This is very important. Otherwise, the shipper often gets the wrong impression, which you want to avoid.

9. Be sure you are right before you make a claim.

One firm that we know has seen to it that its warehouseman and his helper know everything there is to be known about outages. They are never given the loading record on a car. They take the shell capacity from the stenciled figures on the end of the car, take their measurements and temperature and figure each car and report the net contents to the office. A comparison is made. If there is enough variation between the loading record and the warehouseman's figures the car is rechecked before the shipper is notified. This is a good system. If you use it and your men know what they are doing you will get accurate information. If they don't, you will find it out quickly. The chances are 2 to 1 you will find they don't know much about outages at first, but hope you can teach them something at least and hope that we have helped you a bit to get the proper idea of what care should be taken in tank car measurements and how cars should be figured.

WEST TEXANS URGED TO PLAY FAIR ON OIL

SWEETWATER, Tex., Apr. 16.—Declaring there is no better storage than nature's untapped oil reservoirs, C. M. Caldwell, Abilene, Tex., principal speaker at the Sweetwater Club and Board of City Development banquet for west Texas oil men here, urged an economical development of west Texas fields and urged west Texans to develop a spirit of fair play with oil men.

One hundred and ten registered during the day, oil men from all parts of Texas and from points as far away as Pittsburgh, Pa., and Casper, Wyo., being present.

Speakers on the banquet program paid tribute to the oil fraternity as men who dared do things, who developed hidden resources that benefited everyone, and the idea of developing Texas was broadened by Mr. Caldwell in his adddress when he cautioned against "lopsided development."

"Texas with a population of 5,000,000 can take care of 100,000,000 without any difficulty if we will do our part in developing all the resources of the state," he said. "Nolan County could easily accommodate a population of 500,000, and I want to tell you citizens of Nolan County that if you take care of the county it will take care of you.

"The oil industry is a great business and an important one, but let's hold our balance and not be in too much of a hurry. We don't wear oil, or eat it. Don't get lopsided. I've been through several oil booms and seen farmers get a little oil. It went to their heads, and from there I don't know where it went. After the boom they had no more than they did before. Let's take care of our wonderful land and other resources and grow and develop the myriad things that will make Texas the great commonwealth she should become.

"We mustn't be in too much of a hurry about oil development. We have the oil all around us, but I know of no better storage for it than the ground. There is plenty of time in which to bring it to the surface.

"Finally, I would tell those of you who are not in the oil business, that oil men are good fellows. Let's develop a spirit of fair play with them. Treat them fairly in your business dealings and they will meet you more than half way. They will not confine their efforts to making money for themselves, they will help you to build roads, streets, school houses, industry and business."

GERMAN OIL DEMAND STEADILY INCREASING

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 16.—Germany's imports of liquid petroleum products in 1926 virtually reached their prewar level, according to a report to Trade Commissioner W. T. Daugherty, Berlin. The outlook for German importation of petroleum products in the future is good. With increasing consumption, incident to industrial recovery and growing motorization, imports must be increased, as the local production amounts to only about 75,000 tons of crude oil, fit only for lubricants, from the Hanover wells. Foreign contributors to this market, however, will have to reckon on Germany's newly developed program for producing petroleum fractional substitutes from coal and lignite hydrogenation. A large plant, whose ultimate production capacity has not yet been announced, is being constructed adjacent to the Leunawerke air fixation plant at Merseburg in central Germany. This operation will hydrogenate lignite, using the Bergius patents and Dye Trust improvements. Its capacity has been variously estimated from 60,000 to 300,000 tons per year.

Several other suggestions to put down "oil from coal" plants have been heard: the one most likely to be next realized appears to be a Bergin plant at Duisburg-Meiderich, to be operated by Gessellschalt fuer Teerverwertung, exploiting low grade Ruhr dust coal. The several propositions may require years before they are on a basis to affect the German market for foreign products, and in the meantime it is probable that local consumption will increase to an extent to offset early efforts at synthetic production.

CROCKETT COUNTY TITLES

SAN ANTONIO, Tex., Apr. 16.—Notice of suit has been filed in the court of the Western District of Texas at Ozona in Crockett County affecting title to seven sections of land and 4,480 acres in the northwestern part of Crockett County and some in Upton which is valuable because close to the Pecos County production. The suit is A. F. Schnaubert and Minnie E. Schnaubert vs. J. H. Tippett and involves Sections 2, 6, 8, 9, 10, 12 and 16 in Block 36, H. & T. C. Ry. Survey.

HEAVY LINE PIPE PRODUCTION; STEEL GENERALLY VERY ACTIVE

By B. E. V. Luty

PITTSBURGH, Pa., Apr. 18.—The steel trade in general continues very active, but there is a little letting down, in buying and in production, from the pace of March. The pipe trade continues to be marked by heavy requirements and production in line pipe and by sluggish conditions as to casing, tubing and other well material.

The estimate made in last report, that steel production last month was approximately equal to that of the preceding March has been borne out by the official report since issued, showing 4,559,400 gross tons of ingots produced, this being 1.6 per cent increase over March, 1926. As that month had held the record, a new record has now been made by this small margin.

It does not follow, however, that consumption of steel is proceeding at a higher rate than ever before, for there was some extra production last month as a precaution against the coal strike. This may have amounted to as much as 5 per cent, perhaps even a little more. Most of the extra production was in the form of ingots, stocked for use later in case there should be difficulty in producing steel. On the whole, however, consumption has had a very fair seasonal increase since December.

Unfilled Obligations

The Steel Corp.'s unfilled obligations decreased by only 43,979 tons in March, against decreases of 203,508 tons in February and 160,792 tons in January, yet shipments were heavier in March, being at about 95 per cent of capacity, against 89 per cent in February and 85 per cent in January. The decrease in the three months was due largely to the heavy shipments of rails and tin plate, which were placed under contract months ago, these lines having lately been out of buying season. Bookings were at 25 to 30 per cent higher rate in March than in February, probably on account of contracting for the current quarter, consumers wishing protection in case the coal strike should stiffen prices.

The long-awaited bituminous coal strike of April 1 has thus far proved to be a very tame affair. The open shop operations instituted in the Pittsburgh district in the past couple of years have continued, and there has been no striking in nonunion fields in western Pennsylvania. There has been more striking in West Virginia than was expected, but not a very great deal at that.

Some coal consumers have the idea that the strike is not amounting to much and is largely over. A much safer view is that the strike has not really begun. The typical coal strike of modern times lasts several months, say four months or more, and the present difficulty may not be settled even in six months. The United Mine Workers require time for producing the striking in nonunion territory they fully expect to bring about.

Amarillo-Denver Line

The trade is under the impression that arrangements have been practically concluded with mills for the 400-mile 20-inch natural gas line from the Amarillo Field, of Texas, to Denver, Colo., involving 60,000 gross tons or more, apart from feeders and branch lines. The line is to be controlled by the Standard Oil of New Jersey as the financial end, the Prairie Pipe Line Co. as the building end and the Cities Service Co. as the gas-distributing end.

Buying of oil and gas well tubular goods has proved much lighter than was being expected a few months ago, but is in keeping with the drilling prospects. A seamless tube mill in western Pennsylvania recently closed, having a large stock of oil country goods. Buying of standard merchant pipe is proceeding at a fair rate, increasing somewhat as the season advances. On the whole pipe mills are conservatively estimated to be operating at about 75 per cent, though some estimates run above this.

Prices at pipe mills are reported to be strictly maintained at the familiar lists. In the rest of the steel list prices are about the same as a month ago. There have been no quotable changes, but there is some doubt whether a little extra softness may not be creeping into the market in a few lines.

Connellsville coke is dull and easy. Pig iron is dull with prices perfectly steady. If the coal strike spreads to the Connellsville region coke and pig iron will promptly reflect.

KENTUCKY-TENNESSEE

(Continued from Page 68)

well on the T. B. Hogan lease was sent to a depth to test out most sands in the Cumberland County area, and, drilled by Ohio parties, is reported a failure in the deep sand. This well has in the past made some very nice showings, and drilled deeper now and then until the oil is all taken out. Wells are reported to have gone off heavily in their production in the Hopewell district of Cumberland County. This pool had some very large initial wells that held up for quite a while, but went down to very small pumpers, which appears to be characteristic of a large portion of Cumberland County as well as parts of Monroe and Clinton Counties.

In the Scottsville Field of Allen County, in the Gainesville district in the northern part of the county, the Tracey Supply Co. has drilled in its second test on the Rube Osborn farm, which was dry at 347 feet. In the same area, R. A. Stohr's No. 12, on the Anthony Welch farm, pumped 1 bbl. initially at 383 feet.

In Daviess County, the Leeper Oil Co. found both the Jett and Jackson sands dry in a test on the Conder farm, adjoining the Veach farm on the east and several miles to the southwest of Pellville, and is now going to the Barlow sand to test out that formation.

Tennessee

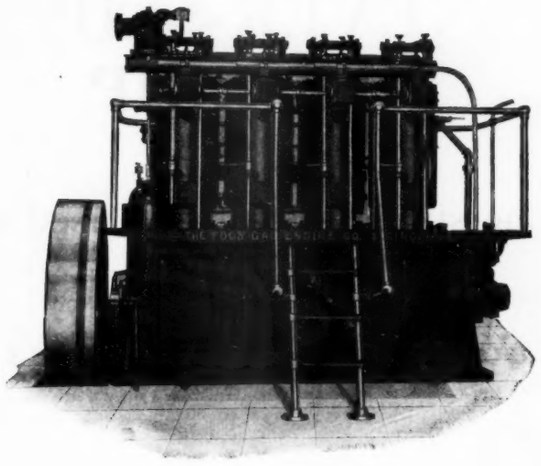
Clay County is again in the limelight with a well reported far above the average, the first well to be drilled in that county by the Ohio Oil Co., of Findlay, Ohio, that some time ago purchased the well and lease on the Lem Cunningham farm, on the Mill Creek structure discovered by John H. McClurkin. The new well is the second on the Cunningham farm and the pay was found at about 100 feet below the Pencil Cave formation at a total depth of 580 feet, the Pencil Cave being found at 480 feet. The well is reported to have flowed at the rate of close to 60 bbls. per hour and is said to be by far the best or largest producer so far found in the Celina Field. Additional tankage has been rushed up to care for the production. This well is near the recent strike made by the Cumberland Valley Oil Co., on the Barlow Langford farm, but is making a much better showing.

This big producer, with recent big strikes in Clay County, have given the oil business a decided boost and Celina is filled with oil men from numerous states who are investigating Clay County's possibilities. Several are understood to have arranged to begin early development of leases near the proven pools.

The Ohio Oil Co., according to advice, is said to be moving in several drilling machines and has under contemplation the drilling of a number of wells on its extensive holdings along the Kentucky-Tennessee border. Development work is bearing to the westward where prospects for production are said to be good by geologists who have been over the area, both in Clay and Macon Counties, and several tests will be made near Red Boiling Springs. The territory to the south looks inviting as far as the Alabama-

THE FOOS TYPE V

Gas Engine



Where it is necessary to operate compressor against varying loads, the close governing of the Foos Type V gas engine permits easy regulation to meet specific load requirements. At constant load, speed fluctuation is not more than 2% from mean speed. Regulation within 5% is maintained between changes from quarter to full load.

This rugged, substantially proportioned engine is equal to every necessity of pumping service. Lubrication is automatic—a combined splash and force system. Utmost simplicity of design and easy accessibility contribute to low maintenance by making inspection and care easy.

Built in units of two, three, four and six cylinders, covering a range of 50 to 500 H. P. Speeds up to 310 R. P. M., depending on engine size and type of drive used.

Write today for Foos bulletin G-58 describing the Type V engine.

POWER

THE FOOS GAS ENGINE CO.

SPRINGFIELD, OHIO, U. S. A.

For 40 years manufacturers of high quality internal combustion engines exclusively. Types for all gas and liquid fuels.

BUY A

LARKIN

NEVER-SLIP
PIPE-GRIP

The surest casing grip used in the oil fields

Sold by All Supply Stores

No. 1 catches 5⅝-in. to 4 -in.
No. 2 catches 6⅝-in. to 5 -in.
No. 3 catches 8 -in. to 6⅝-in.
No. 4 catches 10 -in. to 8 -in.
No. 5 catches 12½-in. to 10 -in.
No. 6 catches 15½-in. to 12½-in.
No. 7 catches 20 -in. to 15½-in.

The *Never-Slip* is made to handle all sizes of pipe and casing up to 20 inches in diameter.

LARKIN & CO.

BUTLER, PA., U.S.A.

Tennessee line, which will no doubt be the next point for active testing.

In the Peterman Bend area of Clay County, J. L. Miller of Holliday Cave, W. Va., drilled in his second well on the Sam Keisling land, 3 miles east of Celina, at a depth of 490 feet, 100 feet below the Pencil Cave. When the first showing of oil was found the hole filled up 225 feet with fluid and as yet its value is unknown. It is located about 600 feet from the Paragon Development Co.'s pipe line running from Peterman Bend Pool up the Obey River to the Fox Springs Pool.

The Ohio Oil Co. is reported to be drilling a purely wildcat well on the Goad land, near Hartsville, in Trousdale County, which adjoins Macon and Clay Counties on the south.

John H. McClurkin, discoverer of the Celina Field, has let contracts for three tests, one of which has already started on the Dr. W. W. Tucker farm, on Long Fork Creek, 6 miles west of Boiling Springs, in Macon County, to the southeast of the Adolphus Field in southern Allen County, Kentucky, and west of the Celina Field of Clay County, Tennessee. Another test has been arranged for at Spivy, in the western part of Clay County, 6 miles east of Boiling Springs, and a third will be drilled at once on the J. C. Long land, on Bullard's Creek, 5 miles west of Gainesboro, in Jackson County and southwest of Celina.

In Overton County, Lawrence Orlov, of Nashville, is drilling a test on the Richardson property near Birmingham on Eagle Creek, 10 miles northeast of Livingston.

MICHIGAN FIELDS

(Continued from Page 68)

any criterion few lots will be without a well.

President Graves, of the Saginaw Oil Association, and also president of the Saginaw Prospecting Co., discoverer of the Berea sand field, does not approve of town lot development, as he does not see where the wells will get and market enough oil to pay for themselves and his company has confined its operations to acreage property where the chances are much better for longer-lived wells. One of the Prospect company's wells drilled in early in 1926, is pumping 10½ bbls. daily and has, since its connection to tanks. Mr. Graves is new to oil producing, but he appears to enjoy the thrill of seeing the oil go into the tanks and the fact that he is in a way to make a good success of his company's operations.

The Sun Oil Co., one of the largest operating concerns in the field, is drilling acreage property and gathering a nice daily production, besides handling a large portion of the production through its pipe lines to a loading rack on the railroad, the oil being shipped to its refining plant at Toledo, Ohio. The Sun Oil Co. has a 2,500-bbl. storage tank at its loading rack and is installing two 2,000-bbl. tanks, working on the bottoms when the writer visited the field. This company is also connecting up the town lot wells to its lines.

In visiting the wells under operation, it was found that the greater number of the drillers and crews are from the Central Ohio Field, having for years been drilling the Clinton sand formations there, the Clinton being much deeper in Ohio than is the Berea in the Saginaw Field.

Saginaw Sand

Prospects are very good for the opening of a good producing field from the Saginaw sand that lies about 500 feet below the Berea sand, also prospects of a still deeper sand, the Dundee sand, and if commercial wells can be found in the deeper sands, it will mean much to the lease owners. The Saginaw sand is around 2,300 feet, while the Dundee runs close to 3,000 feet in depth.

The Sun Oil Co.'s well, on the Ferdinand Stelzreide farm, Section 11, Saginaw Township, that found a rich pay in the Saginaw sand at 2,321 feet, with an initial production estimated at 475 bbls., gradually declined until it is down to around 40 bbls. Last week the company drilled through 25 feet of Saginaw sand and the well went to 80 bbls. a day, but gradually decreased at the close of the week to a reported production of 45 bbls. This is a remarkable well for the Berea sand and numerous tests are now going toward the lower pay where the Berea sand fails to make a real good showing.

The Bliss Petroleum Co. has concluded a second well on the C. Boldebuck farm, SE, Section 2, Carrollton Township, Saginaw County, on which about a year ago the company drilled to the Berea sand a dry hole which at that time was nearly a mile north of production. Since the Sun Oil Co. got its Saginaw sand well on the Stelzreide farm, the Bliss company is going to make an effort to find production south of the dry hole and north of the Stelzreide well by the drilling of No. 2, in the southwest corner of the Boldebuck farm, to the Saginaw sand and if dry there to go to the deeper Dundee sand. Same company is drilling to the Saginaw sand at its No. 2 on the Fred Engle farm, E half SW, Section 10, same township. The well had a fair showing in the Berea, but the owners prefer to test out the Saginaw sand, figuring that it is in a southwest course from the Stelzreide farm well. The Engle well will put in 8-inch casing through the Berea sand.

The Ohio Oil Co. is starting a test to go to the Saginaw sand on the A. Kull property, Section 11, and northwest a short distance from the Sun Oil Co.'s Stelzreide deep well. The drilling is being done by Hagen & Hagen for the Ohio.

The Ohio Fuel Corp. is drilling its No. 4 on the Fisher farm, Section 10, to the Saginaw sand. This well is southwest of the Sun company's well.

The Sun Oil Co. will drill its No. 2 on the Doctor Bradshaw farm, Section 10, to the Saginaw sand, having already cased through the Berea sand and is going along nicely. No. 3, same farm, will be drilled to the Saginaw sand as well.

The Saginaw Prospecting Co. is drilling down its Berea sand well on the George Griebel farm, at Shattuck Road and Hermansau Road to the lower Saginaw sand, and its No. 2, on the Scherzer farm, north of the Shattuck Road. is on its way to the deep sand.

Dundee Sand Test

The J. & S. Development Co.'s well, on the John Sliva property at Deindorfer and Charles Streets, had a slight showing only in the Berea sand and concluded to go to the Saginaw sand which failed to make a showing and the well kept going toward the Dundee sand, which was reached at close around 2,900 feet and at last reports had drilled 34 feet into the Dundee without a showing. It must be remembered that every showing found in the Dundee so far, has been at from 70 to 90 feet in that sand. The Sliva is still drilling.

Late Completions

Only four completions are reported from the Saginaw Field for several days. The Fordney Petroleum Co.'s No. 1, on the Gardner property on Schaefer Street, is reported to have flowed 40 bbls. over night.

H. W. Schaiberger and others' No. 1 Schaiberger property, at Pleasant and Oakley Streets, topped the Berea at 1,821 feet and went 19 feet in the sand and shot with 60 quarts, is showing for 20 bbls. initially.

Fordney Petroleum Co.'s No. 1 Flack property is also showing for 20 bbls. Sand was found at 1,806 feet and drilled 19 feet in the sand.

Saginaw Prospecting Co.'s No. 1 Rechter farm, on the Shattuck Road, struck top of the Berea sand at 1,819 feet and drilled 20 feet in and given an 80-quart shot Wednesday, is estimated at 20 bbls. initial production.

Field Pickups

Arrangements are being perfected for the drilling of 10 wildcat wells over a large area along the east coast of Michigan was the report at Saginaw, but no one would divulge where these tests are to be drilled, in fact it is doubtful at this time, whether or not those inter-

ted know for sure, nevertheless they will be closely watched for and with much interest, for the prospects along the east coast are good for the opening of numerous pools from Monroe County on the southeast to the north end of the state.

Efforts to follow up the discovery of a showing of oil in the Saval Development Co. well, east of Birch Run last winter, will be undertaken by the company in the near future, by the drilling of a second well on the farm of Michael Courtney, where its first was located, but the second well will be in the southeast corner of the farm, while the first was in the northwest corner. There was a show of oil in the original well, but it was accompanied by a large amount of water and the well was plugged. The new location is about a half-mile southeast of the first, and company officials are strongly hopeful of a better showing than in the first hole. Meanwhile, two wells are in various stages north of Birch Run and in the Blackmar district. The well of J. F. Marchant, about a mile north of Birch Run, shut down at round 1,000 feet due to a breakage on the drilling machine. The well of Willard Johnson, trustee, three-quarters of a mile southeast of Blackmar, was reported setting 8-inch casing.

Arthur W. Benjamine, trustee, is drilling No. 1 on the Benjamine property near the corner of Michigan Avenue and Irving Avenue, not far from the National Supply Co.'s store on Michigan Avenue. George Clapp, formerly at Paintsville, Ky., is the Saginaw representative and has many friends in the field. The Benjamine test is to be the first in that immediate vicinity some distance south of production, but northwest of the Niagara Street well of Barton and others that got a showing of oil. The work will be done by Jack Hendricks of Detroit.

EASTERN FIELDS

(Continued from Page 70)

deeper to a total depth of 1,702 feet, and is producing 20 bbls. a day.

In Henry district, Clay County, the South Penn Oil Co. has drilled No. 16 on the O. D. Stockly farm into the Big Injun sand, showing for a 15-bbl. pumper. The location is 550 feet north of No. 17 on the same farm. In Sheridan district, Calhoun County, the Hope Natural Gas Co. has drilled to the lower sands a well on the Albert Bell farm. It is dry.

In Spencer district, Roane County, Godfrey L. Cabot has completed his test on the A. J. Runnion farm. It is a gasser in the Big Injun sand. In Smithfield district, the United Fuel Gas Co.'s test on the J. G. Keffer farm is a gasser in the same formation. In Geary district, the King Oil & Gas Co. is now through the Berea grit at a test on the Alexander White farm, and dry. In Center district, Okey Bennett & Co. have a gasser in the Big Injun sand at No. 3 on the James F. Shock farm.

The Cleveland & Cameron Gas Co.'s test on the C. M. Lemon farm, in Church district, Wetzel County, is a gasser in the Big Injun sand. In Church district, Orndoff & Co. have a Gordon sand gasser on the Rhome Otho farm.

Test Wells Due and Starting

In Sheridan district, Lincoln County, H. H. Dial & Co. are rigging up on the Alice Ferrell farm. In Scott district, Boone County, on the George P. Anderson farm, E. R. Cameron is skidding the rig and starting a new hole. In Grant district, Cabell County, the Monickel Gas Co. is casing 1,943 feet on the A. H. Nichols farm. In Jefferson district, Lincoln County, Roy & McComas are building the rig for another test on the Randolph Sias farm. In Magnolia district, Wetzel County, the Silver Hill Oil Co. has started to drill No. 4 on the J. F. Burley. In Center district, the Hope Construction & Refining Co. is building a rig on the R. M. Postlewaite farm.

On the Kanawha River, Center district, Calhoun County, W. H. Bickel has the rig completed for a second test on the Betts heirs' farm. In Spencer district, the Hope Refining Co. has rigged up to drill deeper its test on the L. G. Garrett farm. In Center district, Gilmer County, the Carnegie Natural Gas Co. is drilling in the sand at a test on the J. R. Rhoades farm. In Greenbrier district, Doddridge County, the Hope Natural Gas Co. is drilling down No. 1 on the Stalnaker heirs' farm. In Murphy district, Ritchie County, the same company is rigging up on the W. B. Cunningham farm. In Grant district, the same company is hauling tools to a location on the Andrew Jordan farm.

Southwest Pennsylvania

The best producer completed in a number of months in the southwest Pennsylvania fields is located in Morris Township, Greene County. It is the Consumers Gas Co.'s No. 4 on the James Rutan farm. It produced 140 bbls. the first 24 hours after drilled into the Gordon sand.

In Morris Township, Greene County, the Manufacturers Light & Heat Co.'s second test on the D. K. Phillips farm is a gasser in the Gordon sand. In Wayne Township, the same company's test on the Jacob King farm is a gasser in the fifth sand.

CENTRAL WEST FIELDS

(Continued from Page 70)

line of the Dayton Fast farm, in the SW of Section 4, struck top of Trenton at 1,118 feet, and at 46 feet in the sand showed an initial of but 2 bbls.

In Marion Township, Hancock County, Denhoff Brothers' test in the northeast corner of the L. Wo'fe farm, in the SW of Section 1, found the top of the Trenton at 1,271 feet and sent the drill down 251 feet in the sand to a total depth of 1,521 feet, where salt water was encountered, and it will require some heavy pumping to bring oil, of which there was a fair showing. West of Findlay, in Eagle Township, B. Porter and others' No. 19 well, 600 feet from the north and east lines of the Henry Deeds farm, in the SE of Section 6, pumped 15 bbls. Sand was topped at 1,312 feet, and drilled 73 feet in the sand.

The Oko Oil & Gas Co. of Lima, of which Mack P. Colt is president, drilled in No. 8 well in the northeast corner of the Alexander Beard farm, in the NW of Section 23, Perrysburg Township, Wood County, with a 2-bbl. pumper. Top of sand was at 1,236½ feet and drilled 53 feet in the sand. This territory, for a number of miles along the east side of the Dixie Highway, is not big production, but the wells are average and maintain their output in excellent shape. If prices of crude and conditions are fair the coming summer will see a lot of drilling in the eastern portion of Wood County and western part of Ottawa County, as well as in Oregon and Jerusalem Townships of Lucas County, where there is still an abundance of virgin territory. Considerable of the material that Mr. Colt secured when he purchased from the Sun Oil Co. its producing properties and wells in Lucas, Sandusky, Wood, Hancock and Seneca Counties, will be used in the drilling of wells throughout the five counties mentioned.

Indiana

Development work is picking up to some extent in the old Trenton Rock area of eastern central Indiana, and also in the southwestern portion of the State, now that the high waters have receded to some extent and the roads are getting passable. Quite a lot of wildcatting is under way in most parts of the State.

In Clay Township, Spencer County, in the extreme southern part of the State, along the Ohio River and north of Owensboro, Ky., the Penn-Indiana Oil Co. drilled a test on the Allen G. Ryan property, Section 31, getting a dry hole. D. D. Flannagan is still working at his test on the Doctor Hoover property, Section 2, Jackson Township, same county. It is only a question of time until some productive pool will be found in the most southerly part of the State, as that area is full of structures similar to those across the Ohio River in Kentucky.

In the northeastern part of Bartholomew County, northeast of Columbus, the county seat, and north of the town of Hope, in Ham Creek Township, unknown parties drilled a dry hole on the J. A.

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4½	16	15	20
4¾	16	15	25
4⅞	16	15	25
5 3-16	16	15	25
6	16	15	50
6¼	16	15	30
6¾	16	15	35
8¼	16	15	65
10	16	15	85
12½	16	15	135
14	16	15	150
15½	16	15	170
16	16	15	165
18	16	15	250
20	16	15	280

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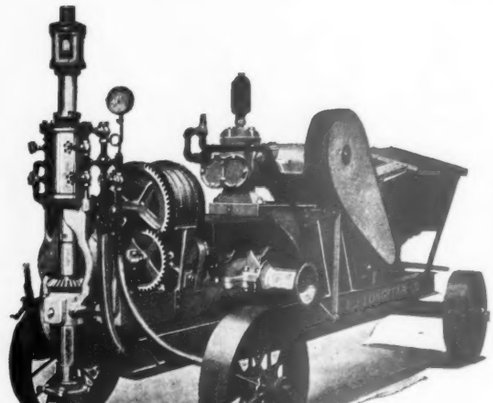

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Spaugh property. In the northwestern part of White County, near the town of Monon, a showing of oil is reported to have been found by Conrad Fatland in a test on the Thomas Spencer property. This is almost directly south of the old Medarysville development of years ago in Jasper and Pulaski Counties, where at a comparatively shallow depth a natural lubricant was found that demanded a price of $3 per barrel delivered in Chicago, when Trenton Rock Oil was bringing less than a dollar a barrel.

Trenton Rock Field

Only one completion is reported from the old Trenton Rock area of eastern Indiana during the week, and that was made by the G. B. W. Oil & Gas Co.'s second well on the Fred Kaufman farm, Section 5, Jefferson Township, Adams County, in the new Berne Field. This well is reported showing around 10 bbls., and No. 3 is drilling.

Unknown parties are reported working on a wildcat venture near the town of Converse, in the southeastern corner of Miami County and southeast of Peru, the county seat, and not far from Amboy Junction, on the Chesapeake & Ohio Railroad.

Southwestern Indiana

Southwestern Indiana is the most actively developed of any part of the State at this time. A couple of excellent wells have been found about 10 miles east of the Veale Township Field of Daviess County, and in Reeves Township, same county, by Phipps, Blosser and Bell Brothers on the Pat Nolan farm, Section 13. This well had an initial production of 22 bbls., and No. 2, just reported brought in, is said to be good for 40 bbls. initial. This is a considerable distance from commercial production. East of Comeback, in the same county, the Washington Home Oil Co.'s test on the Ike Purcell property is reported dry.

In Washington Township, Pike County, Claud E. Noble's test, 650 feet from the north line and 225 from the west line of the Morrison farm, in the SE of Section 19, is an 8-bbl. initial producer. Top of sand was at 1,136 feet and found 6 feet of sand and drilled to a total depth of 1,175 feet. In Logan Township, Buery Wadson and others' test, in the southwest corner of the Marvin Miley farm, in the NW of Section 14, proved to be a duster at a total depth of 1,426 feet. Consolidated Oil & Development Co. pulled out and abandoned No. 4 on the H. Atkinson farm, Section 22. Henry Skidmore and others are drilling No. 1 on the William West farm, Section 24, same township.

Bell Brothers' test, 200 feet from the north line and 720 from the west line of the George Annis farm, in the SE of Section 28, Center Township, Gibson County, was dry at 1,543 feet. In Barton Township, same county, the same firm drilled a second test in the northeast corner of the M. M. Conrad farm, in the NW of Section 10, which was dry at 1,531 feet. No. 3, same farm, is drilling.

H. H. Adkins is drilling a test northeast of Farmersburg, in Linton Township, in the southern part of Vigo County, south of Terre Haute and north of the Sullivan County Field.

Statewide Developments

Oil and gas developments in Indiana, by counties, compiled by T. M. Kingsbury, state gas supervisor, Department of Conservation, Division of Geology, Indianapolis, says:

Adams County—In Jefferson Township, R. O. Grim and others have completed two producing wells and are drilling No. 3 on the Fred Kauffman farm, SW Section 5. In Section 6, McKelvey and others got a 40-bbl. well on No. 3 J. M. Peel. The wells in this area are holding up good. Seven wells on the Niblick and Smitherly farms, drilled eight months ago, filled eight 100-bbl. tanks last month; and three wells on the Bollenbacker farm ran 600 bbls. during the month. In Wabash Township, Russell and others got a dry hole on the Adair farm.

Bartholomew County—Columbus, Ind., men have raised funds to drill a test well in Ohio Township. This well, promoted by Grandville Lee, will be started soon.

The test drilled on the J. A. Spa farm, Haw Creek Township, north Hope, for gas, was dry.

Benton County—Plans are being m to drill a test well near Oxford, in Grove Township.

Blackford County—The well drilled the Lon Brown farm, Harrison Townsh which made 50 bbls. initial production creating a renewed interest in the cinity of Montpelier. Swain & Mast who took over the Montpelier Develo ment Co. property, plan to drill anot well on the Gerard farm.

Daviess County—In Reeves Townsh Section 13. Bell Brothers and Phipps Blosser, drilling No. 2 on the Pat No farm, encountered oil at a depth of 1 feet. No. 1 on this lease made 22 b initial production, and No. 2 made bbls. T. T. Cochran and others of W Virginia have completed No. 1 on Han Robinson farm, Section 32, Harris Township. Production not known as J. E. Thorne drilled a dry hole on Gus Wonders farm, Section 28, Va Township, and the Washington Home Co. got a dry hole on the Isaac Purc farm, Section 35.

Dubois County—Wheeler and othe drilling on the William Meisner far Section 6, Cass Township, have sh down at 1,320-foot depth.

Fountain County—James Yerkes l leased several thousand acres, north a east of Covington, and it is reported Pennsylvania company will drill the soon.

Grant County—John A. Green of Ma cie has contracted to drill three wells oil near Fairmount for the Fairmou Oil, Gas & Land Co. Two companies leasing land in Fairmount Township.

Gibson County—Bell Brothers co pleted two wells, one on the Geor Annis farm. Section 28, Center Tow ship, southeast of Francisco, which h an oil showing 110 feet below base Beaver Bend limestone, and a dry ho in No. 2, M. M. Conrad lease, Section Barton Township. This company h started No. 3 on the Manahan farm, S tion 10, same township, Sommervil area, it being south of No. 1, which w a good producer. The best well in th area was drilled by Charles Stroble Veierling heirs farm, Section 29, Was ington Township. Its initial producti was said to be 100 bbls. The followi wells are being drilled in Washingt Township, Section 6, F. Thompson far by Bell Brothers; Section 29, E. Man farm, by Charles Stroble; Montgome Township, Section 15, John Enlow far by Enlow and others; Barton Township Section 8, H. E. Raiborn farm by Ge Oil Corp; Union Township, Section 2 J. and A. Yeager farm, by Carter an others.

Howard County—N. E. Masters pla to drill two wells in the southeaster part of the county. Last fall he drill two wells in this area, one being 4 mil east of Kokomo and the other near We Liberty.

Jay County—The best well to drilled for some time in this area w recently completed on the Clarence Brin erhoff farm, Bear Creek Township, Se tion 22, south of Bryant, by the Wate loo Gas & Oil Co., of which Russel Ridenour is secretary. It made 100 bb initial production, it is reported, and the first to be drilled by this company this farm. The company has bought producing leases in the township an plan to drill other wells soon. In Secti 33 a well is being drilled on the A. Brown farm.

Lake County—Plans have been ma to drill a test well near Hobart, in t northeastern part of the county.

Marion County—The well drilled sou of Acton went into Trenton more th 50 feet without encountering oil.

Miami County—A well has be started in the southeastern part of t county near Converse.

Pike County—In Logan Township Section 24, the E. Beck No. 2, drilled b J. H. Skidmore, made 45 bbls. at 1,34 feet in depth; and in Section 13 the E. Wilson No. 2, drilled by the Wiser O Co., made 20 bbls. On the M. Miley farm Section 14, Armstrong and others com pleted a dry hole at 1,426 feet in dept

following wells are being drilled: illiam Miley No. 1, Section 14, by Morey and others; P. Atkinson No. 1, Section 23, by Singer and others; Walter non No. 2, Section 13, by Young and ers; Eliz Falls No. 1, Section 14, by Andrews; E. G. Wilson No. 3, Section by Wiser Oil Co.; William West No. Section 24, by Skidmore and others; n Miley No. 1, Section 14, by Ranl and others. In Washington Township. Moulton & Nob'e completed a 15-t well on the R. Morrison farm, Section 19, and got a dry hole on the S. eathers farm, Section 7. A. B. Bent is drilling on the Pike County farm, ction 13; and in Clay Township he is illing No. 2 on the Edon Catt farm, ction 14. In Monroe Township, the m Oil Corp. completed a gas well on eorge A. Taylor farm, Section 19, reported to be making 500,000 feet.

Spencer County—The Penn & Indiana l Co., drilling on the Allen G. Ryan rm, Section 31, Clay Township, got a y hole. In Jackson Township, D. D. annagan is drilling on the Doctor oover farm, Section 2.

Sullivan County—In Turman Township, NE Section 35, G. G. Billman, illing on the James Huff farm, got a owing of oil, but went into water. Well ugged. H. R. Knox and others (Raley il Co.) are drilling on the Alex Raley rm, Section 1, near the deep well rilled last fall by the Ohio Oil Co. In airbanks Township, the Ohio Oil Co. drilling on the M. J. Hale farm, Section 4, about 2 miles east of the Thomas ell. West of this well, across the Wabash River in Illinois, Wilson and thers are drilling just east of the Hartman & Sargent leases.

Vigo County—The Ohio Oil Co., drilling on the James Stout farm, Section 26, Prairie Creek Township, near Middletown, is around 1,700 feet. H. H. Adkins as started a well northeast of Farmersburg, in Linton Township. The Siosi Oil o. completed a gas well on the William iggs farm, Section 31, Prairie Township, just north of its Thomas well.

Warrick County—Mullin and others, rilling on the Charles Watt farm, Greer ownship, Section 1, got a dry hole, otal depth was 1,428 feet. In Pigeon ownship, the Turner Oil & Gas Co. is rilling No. 2 on the Veck-Folsom farm, ection 7.

White County—A well drilled on the homas Spencer farm, near Monon, by Conrad Fatland some months ago was ecently discovered to have oil standing it near the surface. This has renewed interest, and another test will probably e drilled.

Illinois

High waters for the past few week ave kept development work in all parts f the Illinois Field at a very low ebb, nd it will take some time for roads to et into shape so material can be handled er them. Wabash County, the home of he Allendale Field, which has been the ost active of any of the counties during more than two years, has been hit pretty ard by the Wabash River. Water has eceded to some extent during the few ays of wind and sunshine.

Only one well was reported for the week, and that was the W. C. Kennedy Co.'s No. 9, being 660 feet from the north ine and 900 from the west line of the . P. Willson farm, in the NW of Section 1, Martin Township, Crawford ounty. The well got its oil in the Bridgeport sand at 1,016 feet in depth.

Central Ohio

The continued high water over the Central Ohio Field is receding quite rapidly the past few days, and as soon as material can be moved to new locations work will show an improvement. Wells that were shut down are now drilling.

Only three completions were reported from the field the past few days, the best of which was the East Ohio Gas Co.'s No. 3 well, 1,200 feet from the south line and 350 from the west line of the John R. Hastings 100 acres, Lot 25, Hardy Township, Holmes County, which is credited with an initial production of 85 bbls. from the deep Clinton lime.

In the Chatham Field, in Chatham Township, Medina County, the E. R. Edson & Son Co.'s No. 30, in the southwest corner of the Carl G. Packard farm, in Lot 4, Section 14, pumper 2 bbls. from the shallow pay sand at 380 feet. This same company drilled No. 3 on line of the William P. Wertz and Carl G. Packard farms, 235 feet from the north line and 1,280 from the south line. It was drilled to a total depth of 382 feet, and will be used as an air well, there being no production of either oil or gas found.

Oil Field Foremen Study Their Problems In Novel Conference

Ordinarily, an oil company operating in a field such as the Panhandle of Texas has its hands full with problems connected with the producing and handling of oil and gives very little thought to its personnel other than to keep an adequate working force. However, the Marland companies recently tried out a plan which is practically an innovation in the oil business and most certainly new in a field like the Panhandle. Foremen's conferences have been held in other industries, generally being attended with more or less success. But there was no precedent for such a course being held in an oil camp. As far as is known only one other oil company in Texas has attempted such a source and that was given to refinery foremen However, the success of that course caused the Marland company to feel that a similar course would be of value to the foremen in the field.

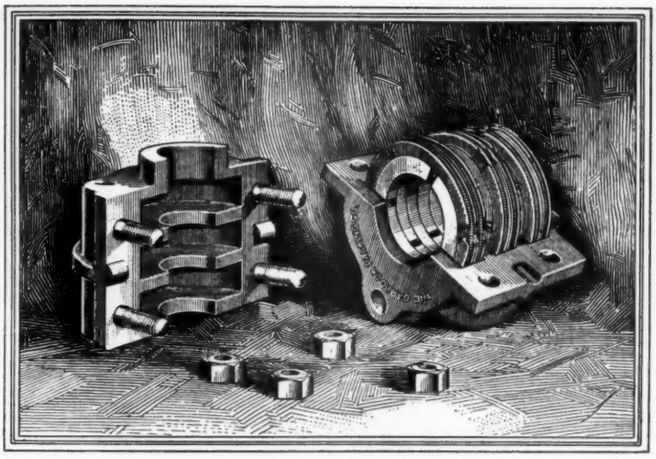
Following out these convictions, the company presented the idea to the Department of Vocational Education of the Extension Division of Texas University. After a discussion of the situation, it designated Hartman Dignowity of that department to put on the course.

The course started February 10 and ended February 19 and included everyone in the Panhandle district from superintendents of departments to "gang pushers"—a total of 93 men receiving the course. The men were divided into four groups, each group being given two hours each day, or a total of 22 hours for each group.

As is usual, when a thing so new as this is started, most of the men came the first day just to see what it was all about. After the first day they came back because such an entirely new angle of their job—of which they had not thought before—had been presented to them in such concrete form that their interest was aroused and they were eager to lay their problems on the table and thresh them out.

In a course such as this the conference leader simply directs the work along lines tending to give a man an objective view of his job—his relation to it—and with it, his relation to the company as a whole. No attempt is made to give a lecture course, or to give job instruction—this being clearly impossible when men representing all divisions of departments such as production, pipe line, transportation, construction, warehouse, machine shop, etc., are in one group. In presenting the course, Mr. Dignowity quickly brought out the fact that each foreman has practically the same problems and responsibilities, the biggest being that of a leader of men.

The first problem to be taken up in the conference was that of leadership. In order to bring out clearly the qualifications of a leader of men, Mr. Dignowity persented the subject in a negative way, asking each man to list the characteristics of foremen for whom they had worked and did not like. The men readily responded to this and needless to say some surprising things were brought out, each group listing approximately 25 characteristics which caused them to dislike foremen for whom they had worked. The lists were remarkably similar. Each characteristic was then taken up by the class and carefully analyzed, the men entering into the discussion wholeheartedly and themselves analyzing the fault as to its importance and the possibility of its being corrected and the man thus be made a better leader or



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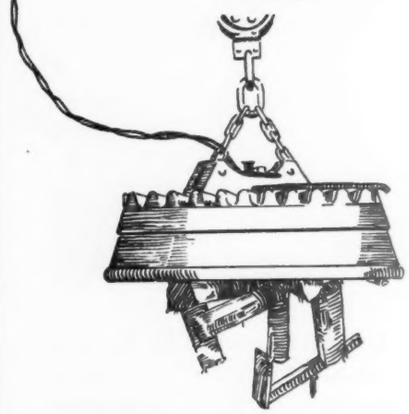

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whether the characteristic was too grave a defect for a man to eliminate. In most cases it was decided that a thorough self-analysis by the man, if cognizant of the fault, would correct it.

The second factor to be taken up was the "responsibility" of a foreman or leader, each group listing their responsibilities as they saw them. Under this head such responsibilities as "Giving Orders," "Creating Interest of Men in Their Job," "Co-operation," "Elimination of Waste," "Instructions to Men" and "Labor Turnover" were listed as most important by each group. Each was thoroughly discussed by the classes and the best method of handling these particular responsibilities arrived at. Under "Elimination of Waste," 77 distinct means of preventing waste were suggested by the men.

The chief value of a conference such as this is that it brings men of all departments together, each getting an idea of the other man's job and from the discussion of various subjects he is led to make a thorough analysis of both himself and his responsibility. While his shortcomings may not be pointed out as directly applying to him, yet there is no doubt they are brought out at least in a figurative way and a method of eliminating them suggested, it only remaining for him to apply the remedy to his own particular case.

Seldom does a course such as this receive the whole-hearted endorsement of the men as this one did. Each man got an entirely new viewpoint, both of his individual problems and those of foremen as a class and their relation to the company as a whole. As one superintendent put it: "If these meetings did but this: cause a man to stop, look and make a self-analysis, they would be well worth the money."

At the close of the course a banquet was tendered Mr. Dignowity by the men in the classes in appreciation of his work.

SPINDLETOP'S MARCH OUTPUT BY COMPANY

BEAUMONT, Tex., Apr. 16. — Runs from the deep sand section of the Spindletop Pool during March total 1,845,126 bbls., compared with 1,872,201 bbls. during February and 2,524,441 bbls. during January.

The March runs were divided as follows:

Company—	Bbls.
Sun Pipe Line	516,787
Humble Pipe Line	449,843
Gulf Pipe Line	401,218
Texas Pipe Line	233,515
*Yount Lee Oil Co.	129,817
Magnolia Pipe Line	113,946
Total	1,845,126

*Run to storage.

The runs from the old cap rock section, included in the above, were 21,949 bbls.

The amount of crude in steel storage in the pool totals 3,866,784 bbls. held by the following companies April 1:

Company—	Bbls.
Gulf company	2,311,250
Yount Lee Oil Co.	731,895
Sun company	517,781
Humble Oil & Ref. Co.	305,858
Total	3,866,784
Total March 1	2,941,362
Increase	925,422

The Yount Lee Oil Co. is credited with all but approximately 670,317 bbls. of the total runs from the pool during March. The runs from its McFaddin, Gladys City, Trembly, Davis and fee properties totaled 1,171,809 bbls. The runs from the Gladys City lease were 458,866 bbls.; McFaddin lease, 392,720 bbls.; Davis, 213,838 bbls.; Trembly, 363 bbls., and its fee tract, 106,022 bbls.

A total of 192,296 bbls. were run from the Texas & New Orleans right of way lease of the Rio Bravo Oil Co., a subsidiary of the Southern Pacific Railroad, which controls the Texas & New Orleans Railroad.

The Gulf Production Co. ran 254,237 bbls. during March from its Oakwood, Roche, Mann, Jack-Duff, Weed and old cap rock leases.

The runs of the Magnolia Petroleum Co. from its tank farm producing property at the south end of the deep sand section during March were 70,386 bbls. The Atlantic Oil Producing Co. ran from its McLean lease 9,586 bbls.; Turnbow Oil from its Weed lease 6,150 bbls., and the Sun company from its McLean lease 2,750 bbls.

The number of producing wells and percentages of sediment and salt water on the various deep sand leases are as follows. The total wells includes only those in the deep sand section:

Company and Lease—	No. Wells	Per Ct. Sediment and Water
Atlantic O. P., McLean	8	20 to 8[illegible]
Rio Bravo Oil, T. & N. O.	14	2 to 8[illegible]
Yount Lee Oil, McFaddin	22	5 to 5[illegible]
Yount Lee Oil, fee	13	30 to 6[illegible]
Yount Lee Oil, Gladys	12	20 to 3[illegible]
Yount Lee Oil, Davis	4	10 to 4[illegible]
Yount Lee Oil, Trembly	1	
Gulf Prod. Co., Jack-Duff	3	90
Gulf Prod. Co., Mann	4	32 to 9[illegible]
Gulf Prod. Co., Oakwood	5	10 to 6[illegible]
Gulf Prod. Co., Roche	7	10 to 9[illegible]
Gulf Prod. Co., Weed	7	85 to 9[illegible]
Sun Oil Co., McLean	2	
Paggi Brothers, Gordon	2	
Magnolia Pet. Co., tank farm	1	10
Unity Oil, McFaddin	1	
	106	

The richness of the deep sands is in keeping with the history and records of the coastal country where big wells that yield up readily and rapidly have been the rule. The Gulf Production Co. has produced 4,500,000 bbls. from six acres, or 900,000 bbls. per acre since the deep sands were opened in January, 1926. The Gulf company's Daisy Roche one acre has yielded more than 1,000,000 bbls. to date. The Rio Bravo Oil Co. has secured 3,200,000 bbls. from 1½ acres of the Texas & New Orleans right of way in the center of the deep area.

CALIFORNIA RECIEPTS AND PETROLEUM IMPORTS

Imports of petroleum, crude and refined oils, at the principal United States ports for the week ended April 9, totaled 1,240,000 bbls., a daily average of 177,143 bbls., compared with 1,452,000 bbls., a daily average of 207,429 bbls. for the week ended April 2, and a daily average of 159,250 bbls. for the four weeks ended April 9.

	Week End. April 9
At Atlantic Coast Ports—	
Baltimore	182,000
Boston	136,000
New York	647,000
Philadelphia	[illegible]
Others	165,000
Total	1,130,000
Daily average	161,429
At Gulf Coast Ports—	
Galveston district	25,000
New Orleans and Baton Rouge	85,000
Port Arthur and Sabine district	[illegible]
Tampa	[illegible]
Total	110,000
Daily average	15,714
At All United States Ports—	
Total	1,240,000
Daily average	177,143
Daily average 4 weeks ended	159,250

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended April 9, totaled 303,000 bbls., a daily average of 43,286 bbls., against 235,000 bbls., a daily average of 33,571 bbls. for the week ended April 2, and a daily average of 80,321 bbls. for the four weeks ended April 9.

	Week End. April 9
At Atlantic Coast Ports—	
Baltimore	74,000
Boston	[illegible]
New York	75,000
Philadelphia	78,000
Others	76,000
Total	303,000
Daily average	43,286
At Gulf Coast ports	[illegible]
Total Atlantic, Gulf Coast ports	303,000
Daily average	43,286
Daily average 4 weeks ended	80,321

Distribution of total California oil receipts is as follows:

Crude	[illegible]
Gasoline	152,000
Gas oil	75,000
Fuel oil	76,000
Total	303,000

ARIZONA BONUS FOR OIL

The State of Arizona is so anxious to have an oil field that the legislature has a bill pending authorizing the state to pay a bonus of $25,000 for the first commercial well that will produce not less than 25 bbls. every 24 hours for 15 consecutive days.

REGULATION OF GAS PRESSURE; MAINTENANCE AND OPERATION

By A. J. Kerr*
Tulsa, Okla., Representative, Pittsburgh Equitable Meter Co.

The purpose of this paper is to give a general outline of some of the most important points covering the maintenance and operating characteristics of high and low pressure regulators.

Pressures are controlled by a number of different systems. The most important must be automatic in action.

Due to the familiar laws of pipe line leakage, it is very essential that all pressure be maintained at a minimum, of course, guarding against the possibility of an insufficient quantity at the point of consumption. This minimum allowable pressure is established by the character of the carrying system and the quantity to be transported. It is economy to keep the controlled pressure near to the minimum without going below. When loads are variable this is very difficult to accomplish and regulator manufacturers are being called upon to control pressures within very close limits.

To analyze the various problems of regulation, we might first consider the various types of large size regulators which have balanced valves. They are divided into three types, special high pressure, standard high pressure and low pressure supersensitive. We can then analyze each as follows:

Special high pressure regulators are designed to take inlet pressures as high as 2,000 pounds per square inch. This range of pressure under present systems of pipe line construction must be reduced to some safe line pressure. The greatest difficulty encountered is the cutting of valves and valve seats, due to the extremely high gas velocity and the foreign solid matter carried by the gas. To overcome this we use case hardened metal for both valve and valve seats. Difficulties of freezing are serious and will be discussed later.

Standard high pressure regulators are designed to take inlet pressures up to 600 pounds and reduce them down to some lower point. It is, of course, to be understood that a 600-pound pressure cannot satisfactorily be reduced to a very low pressure in one regulator. Such a reduction shou'd be made in two or more steps. Sometimes dissatisfaction is experienced when regulator companies give an allowable inlet pressure of 600 pounds and a low outlet pressure. The nomenclature on the regulator merely states that the body of the regulator will withstand a pressure of 600 pounds.

Most regulators are designed to control the pressure within satisfactory limits. These limits are sufficiently close for the majority of services. Some few requirements necessitate very accurate control.

I have been called upon to explain various difficulties encountered when regulating gas pressure and a short discussion of various points may be of interest.

Freezing

The tendency of a regulator to freeze is due to the rato of inlet to outlet pressures, the character of the gas and the design of the regulator. The law of expanding gas states that it absorbs heat very rapidly at the point of expansion. If heat is not available, the temperature of the expanded gas becomes very low. The low temperature is due to the ratio of inlet to outlet pressure and if this ratio is large a low temperature is the result and some constituents of the gas solidify. It is apparent, then, that the character of the gas determines largely whether or not ice will be formed to interfere with the regulator operation. If the gas carries free water, the reduction in pressure must be low, as the water will solidify as soon as the temperature reaches a point below 32 degrees Fahrenheit. On the other hand, very dry gas, when at high pressures and reduced or expanded to low pressure, will cause a temperature far below zero and will solidify some of the natural constituents of the gas.

Taking a typical example, we may have gas at 300 pounds saturated with water. After the gas is expanded its water carrying capacity is greatly increased and water would be absorbed by the gas at the low pressure. Even in this case, however, such a low temperature is formed right at the valves that ice is formed. This one place will ordinarily interfere with proper operation of the regu'ator. To overcome some of this trouble we have found it good policy to have the valve guides removed as far as possible from the actual valve seat. Ice then formed at the valves does not interfere with the valve guides.

In some cases where gas carries large percentage of water or where ratio of inlet pressure is large, it is economy and almost a necessity to install some sort of heater on the lines very close to the inlet of the regulator. This ordinarily remedies the freezing trouble.

Internal Friction

It is very essential that all friction be eliminated from regulator parts, so that the valves will be free to move with the slightest variation in outlet pressure. If there is undue friction the regulator will open or close by jumps. This gives a very irregular pressure curve and each sudden change in pressure gives a very large change in volume of gas. This is very serious when the gas is measured immediately below the regulator. A good test for friction is to move the lever by hand to some new position and see whether or not it returns to its original position. If it returns near to its original position there is very little friction. If, however, some of the parts are binding or sticking the lever will stay in the new position.

Dirt

A few years ago the biggest dirt troubles were experienced in new lines where it was common to find rabbits, stones, sticks and all kinds of things jammed in the regulator valves. Such troubles were only temporary and a few cleanings removed all trouble. Now since some gas being transported oxidizes the interior of the pipe lines, great quantities of dust accumulate in regulators as well as in other equipment. A regulator will not operate properly when the valves and body are jammed full of this dirt. This trouble has made a demand for a regulator which can be cleaned and serviced easily and quickly, without removing it from the line. Also this dust constantly passing through the valves cuts them badly. To meet this condition, seats should be renewable and valves made adjustable.

Tight Shut-Off

Hard seat regulators can be ground so that valves do not leak, yet the first shot of gas will leave a deposit on the seats sufficient to make the valves leak. From a manufacturer's point of view this is rather hard to explain, as some field men claim that a new regulator should shut off tight. This is particularly true in border reducing stations for small towns. To accomplish this, we have been furnishing, for inlet pressures up to 75 pounds, regulators with raised seats and with valves equipped with paranite discs. The paranite discs stand up very well under dirty gas condition and they allow a very positive shut-off, even if a certain amount of dirt is present.

Effect of Varying Loads

The inlet pressure remaining constant, it might be interesting to discuss the reason for the slight variations in outlet pressure due to change of load. The diaphragm of a regulator is one of its most important parts and the most practical for all service is one made of rubber or composition. In testing the characteristics of a diaphragm, we have found that a certain pressure will balance a given weight at one point only. To analyze this we can take a typical

*Before Southwestern Gas Meter Short Course at the University of Oklahoma, Norman, April 6, 1927.

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diaphragm and place a weight of 500 pounds on top of it and put gas pressure underneath. By increasing the gas pressure it is found that the diaphragms will lift the weight gradually as the pressure underneath is increased. To get to practical conditions, we can say that if there is an allowable travel of 1 inch, that the diaphragm will start to lift the weight at 35 pounds' pressure. Then as the pressure is increased, the diaphragm will rise and at 40 pounds the diaphragm will have traveled upward 1 inch. Picturing this condition in a regulator, we would have the 500-pound weights applied to the diaphragm directly or by a system of levers and weights. With no pressure under the diaphragm the weights would hold the valves open, then 35 pounds under the diaphragm would just be sufficient to balance the weights. In order to close the valves under these conditions, it would be necessary to increase the pressure to 40 pounds. This all proves that the effective area of the diaphragm changes considerably with different positions. Now considering this change in effective area in reference to the actual operation of a regulator, we can assume a constant inlet pressure of 100 pounds. We would place the 500 pounds of weight on the diaphragm and would naturally find that the outlet pressure would rise to 40 pounds where valves would close. If the requirement for gas came on the outlet, pressure would fall to 37.5 pounds, assuming that a valve opening of one-half inch would pass sufficient quantity of gas. This shows the characteristic rise and fall of outlet pressure with corresponding rise and fall in demand.

Effect of Varying Inlet Pressure

To analyze the effect of inlet pressure, we again call your attention to the pressure which will balance a certain weight at a certain position. If the load or demand remains constant, the valves must open farther when the inlet pressure falls and must close when the inlet pressure rises. For the valves to rise and fall it is necessary for the outlet pressure to change, to offset the change in effective area of the diaphragm.

A theoretically perfect gas regulator would always give a definite outlet pressure for a certain weight placed on the diaphragm. If we would replace the diaphragm by a frictionless piston and cylinder having a constant area, we would get this perfect regulation. Such a design, of course, is not practical.

I am hoping that these explanations will give a definite idea why a regulator, when set at a certain outlet pressure, will change with both inlet pressure and quantity of gas required to pass through it. This change in outlet pressure, however, is not objectionable in the majority of cases.

Perfect Regulation

We can define perfect regulation more clearly now by stating that it is perfect only when the outlet pressure does not vary at all with changes in inlet pressure or changes in volume. A recording gauge on the outlet of a perfect regulator would show a smooth circle with no variations. Such regulation is not a necessity in very many installations but should be of general interest here. Such regulation has been achieved, where, on on Emco regulator, the variation in outlet pressure is one-fourth of one pound at a pressure of 40 pounds. Some description of this installation will no doubt be of interest.

We have talked above about the change in effective area of the diaphragm and for our comparisons we may state than on a 7-inch diaphragm the area changes from 10 square inches to 11 square inches for the required valve travel. Reducing this to any standard regulator conditions, we could expect, at 40 pounds, a variation of 3.63 pounds. At 80 pounds we would get a similar variation of 7.26 pounds and the variation would increase as the inlet pressure increased.

From this it can be seen that, at a pressure of two pounds on outlet of regulator, the variation would be well within the limits of one-fourth pound. To get this action, it is merely necessary to replace the weights on top of the diaphragm by gas pressure. This gas pressure forms more or less of a balanced condition, making the effect of the diaphragm the same as at the 2-pound pressure, the 2-pound pressure being sufficient to lift the weight of the valves and diaphragm parts. To further analyze this condition at a high pressure, of say 50 pounds, we could maintain very accurately a pressure of 50 pounds on top of the diaphragm then the pressure under, which is the regulator's outlet pressure would only vary from 38 to 38¼ for full value travel.

To maintain this constant pressure on top of the diaphragm, we used for our test a commonly known oxygen regulator and allowed a small amount of gas to escape. The inlet of the small regulator was taken from the inlet of the large regulator. This balance pressure can be maintained very accurately in this way because of the constant small volume passing through it.

On the particular installation where this was tried out, a 12-inch Emco high pressure regulator was used where approximately 100 pounds of gas was to be reduced to 40 pounds very accurately. The weights which ordinarily are placed on top of the diaphragm were discarded as outlined. It was found that the 12-inch regulator installed in this manner was extremely sensitive and controlled the outlet pressure within one-fourth pound under any variable load condition. This system can be attached to the Emco high pressure regulator because of its design having the outlet pressure under the diaphragm and having a minimum friction.

We know that high pressure can be controlled very accurately when desirable.

Low Pressure Supersensitive Regulators

Getting back again to the types of regulators we have one more to consider, namely, the low pressure type supersensitive.

We have discussed the change in effective area of a diaphragm as causing the variation in outlet pressures of high pressure regulators. To overcome this effect in regulating low pressures, we have made our diaphragms of leather and have formed them in such a way that there is a very minimum change in effective area. By doing this we are able to place a certain weight on top of the diaphragm and have the weight balanced by a certain pressure. This pressure then will balance the weight at practically any point in the diaphragm and valve travel.

Looking into the future, we can see a development in regulators which will make everything automatic. This will be accomplished when a regulator both high and low pressure can be installed which will automatically boost the outlet pressure to the proper point to offset the additional load and then reduce it again when the load decreases. With this arrangement the pressure on lines and systems could be maintained at an absolute minimum point. The pressure curve would then not be a uniform line but would follow directly the gas demand.

It is my hope that the problem of gas regulation will be given the same careful consideration that is given to gas measurement. The two are very closely related and it is good policy to make this relationship very intimate in the organization of the gas company personnel.

DEATH OF SMITH L. TITUS

LEXINGTON, Ky., Apr. 16.—Smith L. Titus, father of C. W. Titus, Tulsa, Okla., oil operator, died in St. Joseph's Hospital here, after an attack of influenza. He was born at Hamburg, N. Y., in 1850, and entered the oil business at an early age. He is survived by his widow, three sons, C. W., George F., and Paul S., all of Tulsa; three daughters, Janet, of Tulsa; Mrs. George Betts and Mrs. Stewart Lyon, of Warren, Pa.; one brother, Frank P. Titus, of Hamburg, and one sister, Mrs. George H. Luther, of Olean, N. Y.

ARTESIA, NEW MEXICO

(Continued from Page 50)

tion the company being incorporated for $50,000 with Francis C. Wilson of Santa Fe, named as statutory agent.

Gov. R. C. Dillon has appointed C. G. Staley of Socorro as state geologist to succeed E. H. Wells, who resigned recently.

Eddy County Drilling

Clark & Grimm's No. 1 Daugherty, NE SW, Section 3-17-27, drilling at 1,240 feet; Compton's No. 3, Mann permitt, SE, Section 3-18-27, shut down at 400 feet; Compton's No. 2 state, NW, Section 2-18-27, shut down at 1,575 feet; Danciger Oil & Refining Co.'s No. 1, SW cor., Section 23-17-27, drilling at 1,675 feet; Empire Gas & Fuel Co.'s No. 1-B Russell, SE NE, Section 34-17-27, drilling at 1,675 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, shut down; Henderson, Dexter & Blair's No. 1 State, NW NW, Section 9-19-28, drilling below 2.300 feet; Kelly's No. 1, Berry permit, NW NW, Section 27-17-27, drilling at 550 feet; Lackawanna Oil & Refining Co.'s No. 1 NE SE, Section 17-16-27, shut down at 2,000 feet, making new contract; Lackawanna Oil & Refining Co.'s No. 7, NW SE, Section 2-18-28, shut down on top pay sand at 2,142 feet; Marland Oil Co.'s No. 1 Hale, Section 11-20-30, drilling at 1,500 feet; Manhattan Oil Co.'s No. 1 Cronin permit, SE NE, Section 1-18-27, drilling at 2.685 feet; Midwest Refining Co.'s No. 1 Terry, SW cor. NW, Section 15-18-26, drilling at 900 feet; Ohio Oil Co.'s No. 1 Marland, SW SW, Section 12-22-29, drilling at 2,880 feet in salt; Prairie Oil & Gas Co.'s No. 1 Keel, SE SE, Section 10-17-31, pumping; Picher Oil & Gas Co.'s No. 4. NW cog. SE SE, Section 12-18-27, location; W. A. Stone Oil Co.'s No. 1 Hnulik, SW cor. NW NW, Section 25-17-26, drilling below 1,200 feet; Superior Oil Co.'s No. 1 SW NW, Section 33-23-28, erecting derrick; Skelly Oil Co.'s No. 1 Lynch permit, Section 22-17-31, drilling in; Texas Production Co.'s No. 1 Robinson, NE SW, Section 25-16-31, drilling below 300 feet; Woolley & Jones' No. 1 McIntyre, C SE, Section 21-17-30, fishing for 14 joints casing.

Chaves County

Arena Oil Co.'s No. 1, SE, Section 24-12-30, rigging up; Buffalo-Roswell Co.'s No. 1, Section 24-11-27, drilling below 4.040 feet; Delmar Oil Co.'s No. 1, Section 22-11-26, abandoned at 2,000 feet; The Texas Company's No. 1 Dunken Dome, SW, Section 29-17-18, fishing for bailer in red sand at 3.400 feet.

Lea County

Cap Rock Oil & Gas Co.'s No. 1 Leonard & Levers, SE, Section 11-16-32, drilling at 1,500 feet; Covert's No. 1 NE NE, Section 15-21-33, shut down in salt at 3,000 feet; Exploration Co.'s No. 1, NE, Section 25-19-35, fishing for two strings of tools at 865 feet; Henderson, Dexter & Blair's No. 1 Wyatt, SW SW, Section 34-17-35, drilling at 4.770 feet; Holmes & Huey's No. 1, Section 18-12-35, temporarily abandoned at 2,200 feet; Ingelfield & Bridges' No. 1, Section 4-17-34, drilling at 4.786 feet; Maljamar Oil & Gas Corp.'s No. 1 Beardsley permit well, SW SW, Section 15-17-32, ready to spud; A. D. Morton's No. 1, SW SW, Section 28-11-38, location; Ohio Oil Co.'s No. 1 William Mitchell permit, NE cor. SW, Section 18-17-32, drilling in white lime at 4.325 feet; Texas Production Co.'s No. 1 Jackson, SE cor., Section 4-20-34, ready to spud; Texas Production Co.'s No. 1 Rhodes, NW, Section 22-26-37, drilling at 500 feet.

CALIFORNIA FIELDS

(Continued from Page 63)

ning three strings of tools at the present time. Three more wells will be spudded in shortly, however, and the usual protective measures against polluting the ocean water are being taken by extending the present concrete retaining wall constructed by the company several months ago.

There were only two new wells finished at Huntington Beach during the past seven-day period, one of which was located in the town lot area and the other in the older section of the field. The latter was No. 3 Buck of the California Petroleum, located in the northern part of the old field in an area once regarded as unfavorable. The California Petroleum's No. 1 Buck, which several months ago extended the productive limits about a half a mile northward, is still on production and averaging around 150 bbls. daily. No. 3, the third producer to be finished on this lease, was a much better well than either No. 1 or No 2. It was drilled to 4,411 feet and finished with a 6⅝-inch oil string carrying 215 feet of 80-mesh screen. The initial production was 380 bbls. of 21.2 gravity oil which shows a cut of 2 per cent. The only other well finished at Huntington Beach during the week was Combs & Bailes' No. 1 Huntington, drilled to 4,404 feet and finished with 4¾-inch liner. The initial production was 447 bbls. of clean 23.9 gravity oil. The two most important drilling projects in the town lot area at the present time, E. J. Miley's No. 5 Pacific Electric and the San Martinez Oil Co.'s outpost near Ninth Street, are still drilling ahead, although the former well will be plugged back, unless some favorable indications are found very shortly. The status of the San Martinez Oil Co.'s outpost is still in doubt and, while small production might be possible around the 3,000-foot level, the outlook for production at 4,800 feet is not any too promising.

Long Beach

Fields may come and fields may go but apparently the Long Beach Field lives on forever. This prolific district yielded another large flowing well during the past week as a result of the recompletion of the Rio Grande's No. 1 Flower State, which was redrilled and deepened to 5,305 feet and finished with a 6¼-inch oil string carrying 725 feet of perforated and a 4½-inch liner, 500 feet of which was perforated. Flowing through a three-quarter-inch bean under a pressure of 700 pounds, the well tanked 1,190 bbls. of clean 29.6 gravity oil during the initial 24-hour run. The frequency with which the Long Beach Field contributes these large wells is really remarkable and, judging by the deep drilling already under way and that projected, this district will continue in the limelight during the rest of this year at least. The Shell, which has only been doing a limited amount of drilling in this area during the past several months due to its drilling obligations at Ventura Avenue, is making preparations to start work on four or five new holes immediately. The Shell's lone driller in the Long Beach Field at the present time is No. 7 Cresson but spud is expected to be made in Nos. 8, 9, 10 and 11 on the same lease within the next 10 days. Rigs for these new projects are already in course of construction and rotary equipment will be moved in immediately. It will be recalled that the Shell was made defendant in a suit late last year, the plaintiffs alleging that drilling obligations had not been diligently carried out. It is thought that the new work now getting under way on the Cresson lease is a compromise for it is not likely that five new wells would be put down at this time unless obliged to do so by lease requirements.

The California Eastern Oil Co., with two new wells and one deepening project to its credit at Long Beach, is making preparations to spud in another driller, No. 1 Brayton, in the southeastern part of the field. The California Petroleum is putting up a rig for No. 6 Davidson and will probably bring in No 1 Flower State as a deep zone producer in the near future. The Delaney Petroleum Corp., General Petroleum, J. E. O'Donnel and Richfield Oil Co. should all finish one or more deep zone producers within the next two or three months. The Miley-Mills organization will soon finish No. 6 in the top zone around 3,100 feet and, since this sand was passed up by most of the other immediate wells in the mad rush for the deep sand, fairly satisfactory production is anticipated. At any rate it should prove a good investment as the capital outlay will be comparatively small and the drilling time short. K. S. Deeds recompleted his No. 3 Hotchkiss a few days ago after cleaning out to bottom, 2,975 feet, and the well was returned to production pumping 130 bbls. of 23.2 gravity oil daily.

Torrance

The Chanslor-Canfield Midway Oil Co., continuing its consistent, yet conservative, drilling policy in the Torrance Field, finished another new producing well in that area during the early part of the week. The company's latest acquisition, No. 70 Del Amo, carried down to 3,629 feet and finished with an 8¼-inch oil string, was brought in pumping 125 bbls. of 19 2 gravity oil daily. No. 70 on the Torrance lease was also finished during the past week but the preliminary production test had not yet been completed up to a late hour. The Barnsdall's No. 15 O'Dea, which was finished in the Rosecrans Field during the latter part of last week, settled down to 2,700 bbls. and it has been holding up at this rate with clocklike regularity. Due to the limited amount of drilling being done in the Dominguez and Santa Fe Springs Fields, completions in these areas have been few and far between during the past year or so. No change in the policy of operators holding potential productive acreage in the Dominguez Field is expected and hence completions during the next several months will continue at a small rate. New wells can be anticipated, however, from time to time but the initial production will probably be small due to the commendable co-operation between the Union and Shell, which companies control practically the entire field at the present time.

Brea Olinda

A check of the various drilling projects under way in the Fullerton or Brea Olinda Field reveals the fact that some six or eight new wells should be finished in this area within the next 60 days. Included in this list are the Birch Oil Co.'s No. 2-A, Brea Canyon Oil Co.'s No. 40 and No. 41, Fullerton Oil Co.'s No. 22 and several holes of the Union and Shell. The most interesting driller in this field at the present time is perhaps No. 3 Olinda of the Union, which is still in the oil sand at 3,395 feet. Progress is being temporarily delayed due to the loss of a core barrel but an early recovery and resumption of drilling is anticipated. Several new wells are also expected to be completed in the Yorba Linda or Richfield district during the course of the next five or six weeks The Union, with six drilling wells on the Stern lease and several more on the A. & P., T. & G. and Y. L. G. leases, is expected to carry off completion honors from a numerical standpoint. The General Petroleum is running four strings of tools in this field, while the Standard, California Petroleum, Continental, Chanslor-Canfield interests and several independent operators round out a well-developed campaign. Development work in the Montebello Field is somewhat limited in its scope, drilling operations being restricted to the Union, Standard, St. Helens Petroleum and a few other producers.

Midway-Sunset

The Standard's field department in the Midway-Sunset area has just closed an exceedingly busy week, during which time four new wells were put on production and several others cemented preparatory to completion. None of the Standard's quartet of new wells were large, although they were commercially productive because of the comparatively shallow depth at which production was secured and the small capital investment required. In Section 7-32-24, the company finished Nos. 21 and 25, the former being put on the beam at 3,340 feet and the latter at 2,842 feet. No. 21 is pumping 75 bbls. of 26.1 gravity daily, while No. 25 is making 160 bbls. In Section 9-32-24 the company's No. 8 was finished as a 75-bbl. pumper from 2,918 feet. No. 46 in Section 5-32-24, which required 4,514 feet of hole, resulted in a 132-bbl. pumper, the oil testing 26.4 degrees and showing a cut of 3 per cent. The Honolulu Consolidated, which is operating a highly-productive piece of property in the Midway district, finished another successful producer during the early part of the week. This was No. 86 in Section 8-32-24, which is making 330 bbls. daily from 2,875 feet, the hole having been finished with an 8¼-inch oil string.

Obispo Gets Good Well

The Obispo Oil Co., which was responsible for the drilling of some 8 or 10 dry holes in the Maricopa Field a little less than two years ago, has just recompleted its No. 7 in Section 32-12-23. This well, like No. 6, which blew in doing around 7.000 bbls. a day back in the fall of 1925, was redrilled and deepened from the upper to the lower zone because of depletion. No. 7, which is being listed as a 1,175-bbl. flowing well from 3,468 feet, two locations south of the company's gusher, which resulted in the drilling of several deep dry holes on adjoining acreage. When No. 6 blew in flowing 7,000 bbls. a day from the so-called Maricopa brown shale, operators holding nearby leases started a mad scramble for gusher production. The Standard, General Petroleum, California Petroleum and several other organizations drilled from one to three and four holes each in search of the elusive sand but none of them succeeded in finding it. Geologists, after considerable study, are of the opinion that the Obispo zone underlying this property is lenticular in shape and pinches out a short distance away from the two wells now producing. The Gore Oil Co. finished a couple more shallow wells in Section 21-31-22 and both Nos. 23-C and 25 C are pumping 20 bbls. of 18.1 gravity oil daily from the 1,000-foot level.

George F. Getty, who has been prosecuting a consistent development program along the Kern River front, finished two new wells in that field during the past seven days. No. 13-A Lehnhardt in Section 14-28-27, is pumping 128 bbls. of 15.1 gravity oil daily from 2,154 feet, while No. 20 Tegeler in Section 22-28-27 is making 140 bbls. from 2,295 feet. Getty's next completion should be No. 21 Tegeler, which has just been cemented at 2,068 feet. The Carrec Oil Co.'s No. 1, in Section 11-28-27, has just been put on the beam at 1,756 feet and it is pumping 75 bbls. of 14.6 gravity oil. The California Petroleum picked up the top of the Vedder zone in the Mount Poso Field, 15 miles northwest of Kern River, at 1,653 feet and a string of 10-inch has just been landed. This well, together with the Shell's No. 4 Vedder in Section 9-27-28, should be put on a production test in the near future. All, however, will be closed in due to lack of transportation facilities. Some additional work was started in the Goleta Field in Santa Barbara County during the past four or five days but, due to the fact that this acreage is all held in large blocks, only a limited amount of drilling will be undertaken for the present. The Miley Exploration Co. recently spudded in No. 4 and No. 1, the deep hole, will probably be given a test from the 2,900-foot level within the next two weeks, as some favorable indications were noted at this point. The Santa Barbara Oil Co., which is the operating unit of the Transcontinental interests in California, spudded in its first test several days ago and this hole will no doubt be watched with considerable interest during the next few weeks, as it will throw considerable light on the extent of this structure. The California Eastern and Clarence Berry are expected to start active drilling on their respective holdings within the next 15 days.

Ventura

The Associated's No. 4 Hartman in the northern part of the Ventura Avenue Field proved somewhat of a disappointment to many, for instead of resulting in a 2,500-bbl. well, as the preliminary production test indicated, it only made 1,400 bbls. during the first 24-hour test. It has since declined to 1,000 bbls daily and if the output continues to fall off as rapidly in the future as it has done during the short period since completion, the company will undoubtedly re-enter the hole for corrective work. This well was finished at 6,552 feet and, while the pro-

duction has all the evidences of edge-water, this has not been absolutely determined. It will, however, be watched very closely during the course of the next week or ten days, as the Bolsa Chica Oil Co. will undoubtedly take advantage of any information found by the Associated since it is developing property near by. The former's No. 2 Hartman is at present drilling ahead at 6,525 feet and while it is the present intention to finish at 6,550 feet, the hole may be given a test before this depth is reached, as it is showing up very satisfactorily with plenty of gas and oil visible.

The Petroleum Securities has just recovered from a fishing job of seven months' duration in No. 1 Willett and the bit is again headed downward in search of the same sand found by the company's No. 1 Orton nearby. Drilling was resumed in No. 1 Willett at 5,620 feet and this hole will be watched with extreme care by everyone interested in the future production of Ventura Avenue, as it will undoubtedly throw considerable light on whether the output of No. 1 Orton is showing the effects of water intrusion or whether the cut is due to mechanical trouble. No. 1 Orton, which was finished by the Petroleum Securities several months ago, is flowing 1,500 bbls. of oil and approximately 500 bbls. of water at the present time. This property is located in the extreme southern part of the field and hence the cause of the large water content in the well's production may be due to edgewater intrusion. On the other hand, it might also result from a defective shutoff. The company has been rather reluctant to kill a 1,500-bbl. well and for this reason it has been permitted to flow uninterrupted for several months. The Shell, General Petroleum and Associated have several potential producers nearing completion in this field and additional wells can be anticipated during the course of the next few weeks.

Southern California Wildcats

Considerable leasing has been undertaken in the vicinity of Sunset Beach where the General Petroleum is drilling a wildcat, No. 1 Lomita, reported down 4,910 feet a few days ago. The General Petroleum has not yet logged any appreciable oil showings up to the present time but in spite of this something like 1,000 acres have been tied up by various operators. The California Petroleum, Union, California Eastern and several individuals are reported to be quite active in this section at the present time. The Shell has tentatively located a wildcat on the Alamitos Land & Water property between Sunset Beach and Seal Beach. This lease adjoins the Associated's Hellman property in the Seal Beach Field. The California Eastern spudded in its No. 1 Santa Monica, or Cypress Heights as it will be designated in the future, and this wildcat, located north of the Associated's test in this area, will be watched with considerable interest during the course of work as it is generally regarded as having exceptional promise. The failure of this company and the General Petroleum to pick up the oil sand a few hundred feet south of the Associated's wildcat leads to the assumption that the field expected to occur in this section lies to the north.

Several hundred acres of possible oil land has recently been tied up in the vicinity of Olive and it appears quite probable that one of the major companies will test out this area in the very near future. The Shell has staked a location on the Allec property south of Placentia, and while material is not yet on ground it is believed that drilling will get under way soon. George F. Getty's scheduled wildcat at Rivera where the Marland, Standard, Shell, California Petroleum and others recently acquired holdings, is due to be spudded in around the latter part of April. The recent abandonment of the Petroleum Securities' wildcat in the San Fernando Valley and the absence of any particularly encouraing showings in the Standard's present wildcat, No. 1 University, at 5,840 feet, does not appear to be the least bit discouraging to the Shell for this company after considerable preliminary work, is contemplating the drilling of a test about a mile north of the San Fernando Mission. The Dominguez Extension Oil Co. claims a very encouraging showing at 5,530 feet and a string of 6¼-inch has been landed at this depth. The Smith Petroleum, which has been working for several months on its No. 1 Johnson near Hawthorne, is making a production test from 6,215 feet and, while the well has made a little oil, it is far from being a commercial producer. The most promising indication is the surprisingly high gas pressure, 625 pounds on the casing, which this well has shown at times.

Northern California Wildcats

None of the various wildcats under way in northern California at the present time showed any evidence during the past week of resulting in production and for this reason leasing activities and the location of new wells were probably the outstanding points of interest. The Birch Oil Co. is making preparations to drill a test well in Tulare County in Section 13-20-26 and spud will probably be made in the very near future as this concern is amply financed and has been on production for a number of years. The General Petroleum is making a very detailed study of structural conditions in the Buttonwillow area and if conditions are favorable for the accumulation of oil on any acreage available a test will undoubtedly be drilled in the near future. The Milham Exploration Co.'s present wildcat in this area is showing considerable gas at 4,205 feet.

The Pacific Eastern Production Co.'s Bakersfield wildcat has taken on a rather doubtful outlook, although it can not, of course, be considered as decidedly unfavorable. The failure, however, to pick up surface indications is somewhat discouraging. The Chanslor-Canfield Midway Oil Co. is making fairly good progress on its No. 1 Quin at Delano but it will probably be another 30 days before this well is deep enough to be of interest. The Marland has resumed drilling on its Jacalitos Dome wildcat in Fresno County but, due to the fact this area calls for deep drilling, the present test will not bear watching for some time yet. The General Petroleum is making preparations to spud in another test at Kettleman Hills in close proxmity to No. 1 Oschener, which the company abandoned as a deep dry hole a year or so ago.

GULF COAST FIELDS

(Continued from Page 57)

and Gayie are drilling shallow wells on the dome.

In the Big Creek Pool, the Gulf Production Co.'s No. 1-A Hubert is at 3,230 feet and No. 2 Hubert is below 3,765 feet. No. 1 J. H. P. Davis is around 3,245 feet. No. 40 Davis is drilling at 2,175 feet and No. 41 Davis at 2,350 feet. The Texas Company's No. 4 Fee is below 3,140 feet with a location for No. 1 Wheat.

The Texas Company's No. 51 Hogg at West Columbia is around 2,900 feet. A derrick is standing for No. 23 Arnold.

At Blue Ridge, Gulf Production Co.'s No. 10 West-Schenck is drilling at 1,700 feet and No. 5 Invincible at 3,234 feet with No. 10 Luscher rotating around 2,800 feet. No. 9 Blakely is at 3,190 feet and No. 15-C Blakely is at 3,190 feet. The Abercronbie Oil Co.'s No. 9 West Schenck is around 2,235 feet. A derrick is up for No. 3. No. 1-A Robinson is sidetracking at 3,185 feet. The Navarro Oil Co.'s No. 2-B Robinson is shut down. The Humphreys Corp.'s No. 3 West Schenck is nearing 3,000 feet. The Overly Production Co.'s No. 1 Blakely is drilling at 3,470 feet.

In the Pierce Junction Pool, on the northwest flank, the Marland Oil Co.'s No. 4 Prudent is below 4,400 feet, Lee and Woodard's No. 1 Settegast is around 3,980 feet. Gulf Production Co.'s No. 3 H. Jones is around 3,800 feet. No. 1 Saunders is at 3,614 feet. The Rio Bravo Oil Co. is deepening No. 1 Bender. Cullen and others' No. 8 Howe on the east side is deepening at 4,235 feet. The Texas Exploration Co.'s No. 10 Dooley is around 4,300 feet.

In the Humble Pool, the Webb Oil Co. is drilling No. 20 Cherry, Parker & Schott No. 4 Crow, the Moody Corp.'s No. 3 Wheeler-Pickens and G. L. Harris No. 4 Bering-Cortes, Beneduum & Trees' No. 1 Hirsch is sidetracking around 4,600 feet. The Atlantic-Simms Oil joint No. 1 Burt & Griffith is at 3,309 feet.

Pools East of Houston

In the South Liberty-South Dayton Pool, The Texas Company's No. 7 Staiti on the east side of the Trinity River is at 3,385 feet. The Gulf Co.'s No. 2 Marshall Fee is at 2,900 feet and No. 1 Bingle is around 3,785 feet. The Associated Oil Co.'s No. 1 Hirschfield is drilling below 3,955 feet.

D. J. Harrison is rigging a test on the south side of the old North Dayton Pool.

In the Hull district, the Republic Production Co.'s No. 33 Dolbear on the east flank of the dome is working over at 3,615 feet and No. 35 is deepening at 3,090 feet. The Gulf Production Co.'s No. 84 Phoenix on the southeast, is drilling around 4,175 feet and No. 85 Phoenix is below 3,600 feet. No. 11 Thomas is at 2,416 feet. The Texas Co.'s No. 1 Armelein is at 4,086 feet. No. 2 Hannah is at 4,051 feet. A location has been made for Texas-Vacuum Co.'s joint No. 7 Hannah. The Hull Oil Co.'s No. 2 Harrison is drilling around 3,325 feet. The Mecom Oil Co.'s No. 2 Taylor is drilling deeper at 3,800 feet. Cannon & Davies' No. 1 Crosby is deepening at 1,045 feet. The Big Dome Oil Co. has a location for No. 1 Palmer.

In the Sour Lake Pool, The Texas Company's No. 1 Homestake is drilling around 1,900 feet. The Humphreys Corp.'s No. 1 Geiscke is idle at 4,000 feet. The Gulf Production Co.'s No. 3 Thompson is rigging.

The Texas Company's No. 3 La Jarza on the east side of the Batson Pool got salt water at 4,480 feet and is drilling deeper at 4,708 feet. The Kirby Petcapitol Oil Co.'s joint No. 7 Hodges on the north side, is at 3,400 feet. In the old section the Deutser Oil Co.'s No. 1 Colorado is deepening around 1,400 feet. The Sterling Oil Co.'s No. 6 Hooks is at 1,465 feet. The Paraffine Oil Co.'s No. 42 Knight is rigging as is the Acorn Oil Co.'s No. 65 Paraffine.

In the Saratoga Pool, the East Side Oil Co.'s No. 1 Ogden is drilling around 2,540 feet. It is a proposed deep test on the east flank. The Rainbow Oil Co. has a location for No. 1 Cotton.

In the Orange Pool, the Gulf Production Co.'s No. 11 Peveto is drilling around 2,785 feet. The Supreme Oil Co.'s No. 2 Jackson is deepening and the Rycade Petroleum Co. will drill No. 5-B State land in Cow Bayou deeper. The Rex Petroleum Co.'s No. 14 Carbello is at 2,545 feet. The Texhoma Oil Co.'s No. 16 Chesson is drilling at 3,575 feet.

The Sun Oil Co. has two rigs in operation at High Island in Galveston County. No. 11 Cade is drilling below 2,765 feet and No. 12 Lockhart below 2,300 feet.

In the Goose Creek Pool, the Lake Shore Oil Co.'s No. 3 Duke is at 3,555 feet. F. F. Wilson has a derrick up for No. 7 Busch. Gulf Coast Oil Corp.'s No. 16 Galliard is around 2,985 feet. Humble Oil & Refining Co.'s No. 70 Smith is a fishing job at 5,050 feet. No. 10 Beaumont will be drilled deeper. The M. & B. Oil Co.'s No. 6 Scorrgea, northwest of production, is drilling around 2,435 feet.

Other Pools

In the Markham Pool in Matagorda County, Hamill and Moody Oil Corp.'s joint No. 1 Powers is pumping 125 bbls. of oil and making 2,000,000 feet of gas at 1,992 feet. Rycade Petroleum Corp.'s No. 3 Myers is going on the beam at 3,350 feet. It will pump around 250 bbls. per day.

The Powers Production Co.'s No. 3 Myers is drilling at 3,892 feet. The Rycade Petroleum Corp.'s No. 1-B Kountz is drilling at 3,600 feet. Deering-Moody Corp.'s joint No. 1 Gray is setting casing for a test of a sand at 3,290 feet. Joint No. 3 Gray is drilling at 3,200 feet.

The Rycade Petroleum Corp. has four wells drilling in the Nash Pool and the Gulf Production Co. is drilling one in the Orchard Pool in Fort Bend County.

South Louisiana

In the Lockport Pool, the Vacuum-Gulf's joint No. 11 Miller is deepening. No. 14 is at 4,435 feet, No. 15 below 3,090 feet and No. 16 around 2,435 feet, with a location for No. 17 Miller. No. 5 Farquhar is drilling at 3,345 feet. Locations have been made for Nos. 4 Friedberg & Wolf, No. 3 Bayou d'Inde and No. 3 G. W. Farquhar.

In the Edgerly Pool, Gulf Refining Co.'s No. 41 Bright-Penn is drilling around 3,400 feet. The Hercules Oil Co.'s No. 1 Paraffine is at 2,980 feet. Crotty Oil Co.'s No. 12 Lilliard is drilling deeper.

In the Jennings Pool, the Abshire-Bolyard Oil Co. set 6¼-inch casing in No. 1 Cline. Smith and Cline are working over an old well and Ratcliffe & Seiis are drilling No. 1.

In the Stark Pool, the Gulf Refining Co.'s No. 5 Lutcher-Moore is drilling at 3,540 feet and No. 1 Industrial Lumber Co. is below 1,235 feet.

New Saline Dome

A new saline dome is reported to have been located by geophysical methods 12 miles southeast of Devers in Liberty County, which would place it northeast of the Moss Bluff Dome, also in Liberty County.

The major companies have decided to cut down drilling operations until conditions improve. This applies, not only to the Coastal region, but to other divisions in Texas and Louisiana as well. The Humble Oil & Refining Co. has reduced its rigs in operation from 90 to 80 within one week and expects to reduce the number 50 per cent within the next 30 to 45 days. As fast as a well is completed the rig will be stored, unless drilling obligations make it necessary to keep it in operation.

The Gulf Production Co. is also reducing the number of drilling wells and has cut its list of drilling wells from 60 to 50 within two months. Further reductions will be made as wells are completed. Only offset wells will be drilled in the pools when necessary, but exploration work around new saline domes will be continued because it requires a long time to develop productive sands on one or more flanks of the Coastal domes. The Texas Company has been conservative in its drilling in the Coastal region for more than a year. It is believed the southwest side of the Spindletop Pool has been defined, which is the present deep sand area. The Yount Lee Oil Co. holds practically all the acreage on the south and southeast flanks, which eliminates competitive drilling on those sides.

Angelina County — Roxana Petroleum Corp's No. 6 Long Bell Lumber Co. lands is drilling.

Brazos County—Edge, Davis and Harris' No. 1 Mathes is rigging.

Austin County—Raccoon Bend district: Humble-Valley Oil Co.'s joint No. 2 Austin College, water at 940 feet. No. 2 drilling around 1,800 feet. No. 1 Bellville school lands, drilling around 1,825 feet; cored at 1,811 feet. No. 2 Reese, drilling below 1,145 feet. Locations have been made for Nos. 1 Deutrick and 1 Woodley. These interests, together with Harry Pennington, have blocked up 35,000 acres in the district. Hickory Mound: Graves and others' No. 1 Cleveland is drilling at 1,100 feet. Mews and others' No. 1 Mews, east of Bellville, is at 706 feet.

Brazoria County — Allen Dome: Roxana Petroleum Corp's No. 3 Allen is drilling around 5,476 feet. It is the deepest test now drilling in the Coastal Plains section and the deepest to date in that county. No. 1 Bernard River is at 5,016 feet. No. 2 Reese is around 2,350 feet. Clemens Dome: Roxana Petroleum Corp.'s No. 4 Clemens is about 4,175 feet. No. 2-A Pabst is drilling at 4,518 feet. Stratton Ridge Dome: Associated Oil Co.'s No. 1 Seaburn is around 2,986 feet. Humphreys Corp.-Pure Oil Co.'s joint No. 1 Armstrong is below 2,900 feet. Gulf Production Co.'s No. 2 Perry, on the south side of the dome, is drilling at 1,655 feet. The Texas Company's No.

2 Sweeney, north of Danbury, is around 1,365 feet. Staley and others' No. 1 Glover, near Anchor, is drilling around 765 feet.

Fort Bend County—Long Point Dome: Gulf Production Co.'s No. 24 Davis is drilling below 1,145 feet. No. 4 Beard is fishing at 2,760 feet. No. 2 Trone, on the west side of the dome, is drilling about 985 feet. A location has been made for No. 2 Wolff.

Galveston County — Liberty Bell Oil Co.'s No. 1 Humphrey is rigging.

Harris County—Hockley Dome: Humble Oil & Refining Co.'s No. 1 Warren is drilling about 565 feet. Dr. P. S. Griffith's No. 2 fee, north of Houston, is around 3,115 feet. Brain and others are starting No. 1 south of Tom Ball.

Jefferson County — Fannette Dome: Gulf Production Co.'s No. 2 Bordages is drilling around 5,308 feet. No. 3 Bordages is below 4,400 feet. Edmund Treste's No. 1 Port, north of Port Arthur, is around 719 feet. F. W. Branigan, of Chicago, is rigging No. 1 Terrell.

Liberty County — Moss Bluff Dome: Union Sulphur Co.'s No. 6 Kyle is rigging. Liberty Bell Oil Co.'s No. 1, a mile north of the town of Liberty, is drilling around 342 feet. A derrick is standing for Barlow and others' No. 1 Manchliffe.

Matagorda County — Hawkins Dome: Gulf Production Co.'s No. 3 Sanborn is at 1,345 feet. No. 2 Parkinson is drilling around 1,435 feet, with a location for No. 3 Parkinson. No. 8 Craig is around 4,310 feet.

Montgomery County — Brain and others' No. 1 Fitch is drilling at 2,310 feet, located north of Spring just over the line from Harris County.

Orange County — W. C. Wells has spudded in No. 1 Stark at Gum Island. Miller and others' No. 1 Brown is a derrick.

Walker County—Southern Crude-Dixie Oil Co. is starting No. 1-A Henderson. Thompson and others' No. 1 Thompson Lumber Co. is idle at 1,500 feet.

Washington County—The Pratt-Hewitt Oil Co.'s No. 1 Kromiscky, in the old Brenham Pool, southwest of Brenham, got a water sand at 2,095 feet. DeWare and others' No. 1 Lehmann is below 2,640 feet. Schurneburg Oil Co.'s No. 1 Brenham is shut down at 1,530 feet.

Refugio County — W. F. Morgan has started Nos. 2 Rogers and 1 Loubert in the Refugio gas district.

Goliad County—Houston Oil Co.'s No. 2 Parks, east of Goliad, is drilling around 3,440 feet. Same company's No. 3 Pettus, west of the town, is at 2,910 feet.

South Louisiana

Cameron Parish — Hackberry Dome: Yount Lee Oil Co.'s No. 10 Gulf is at 3,307 feet. No. 6 School lands is drilling at 4,780 feet. No. 4 State land, rigged up. Union Sulphur Co.'s No. 2 Gulf is a location. No. 3 is drilling at 2,413 feet. No. 1 Little is below 1,943 feet and No. 1 Vincent is at 1,909 feet. The Border Research Co.'s No. 1 in Mallard Bay is at 2,785 feet. A derrick is standing for No. 1 in Sabine.

Calcasieu Parish — Sulphur Dome: Union Sulphur Co.'s No. 720 fee is drilling deeper around 4,395 feet. Benkenstein and others' No. 1 Sulphur is drilling around 4,245 feet. Border Research Corp.'s No. 1 Calcasieu Lake is at 4,165 feet.

Assumption Parish — Union Sulphur Co.'s No. 1 School lands is at 1,040 feet.

Iberia Parish — Eagle Point Dome: Gulf Refining Co. is driving piling in Eagle Point Lake for a derrick for No. 2-Z State lands. No. 1 Broussard is shut down at 3,190 feet. Border Research Corp.'s No. 1 in Vermillion Bay is still shut down. Calcasieu Oil Co.'s No. 1-A Schwing is drilling around 2,835 feet.

St. Mary Parish — Border Research Corp.'s No. 1 in Grand Lake is shut down at 4,520 feet. No. 1 Cote Blanche is also shut down.

St. Martin Parish—Rycade Petroleum Corp.'s No. 1 Atchalafa is drilling around 3,850 feet. Ohio Oil Co.'s No. 3 Martin has been idle for 60 days. The Bowie Oil & Gas Co. is starting No. 4 Bernaud.

Jeff Davis Parish—F. I. Getty's No. 1 La Casine is at 3,515 feet and fishing. The Estropal Oil Co.'s No. 2 Duex is drilling around 2,900 feet. The Eltton Oil Co.'s No. 1 Buller is idle at 2,065 feet.

Evangeline Parish — Pine Prairie Dome: The Texas Company's No. 2 Guillory is drilling around 4,235 feet.

St. Landry Parish—The Bristol Oil & Gas Co's No. 1 Breaix and the Terre Bonne Oil Co.'s No. 1 Whitman are still both standing idle at 3,015 and 2,650 feet respectively.

Ascension Parish — Gulf Refining Co. has started No. 1 United lands.

Terre Bonne Parish—J. P. Bech's No. 2 Southtown is ready to start.

MEXICAN FIELDS

(Continued from Page 52)

erations in Cacalilao follow: No. 146, Lot 1, is in gray lime at 1,770 feet; No. 149, Lot 2, is showing for a well. The drill is in gray lime at 1,728 feet, and the test is flowing 750 bbls. Its No. A-187, Lot 3, cemented 8-inch in gray lime at 1,105 feet; its No. A-179, Lot 2, cemented 8-inch in the same formation at 1,060 feet, and it is rigging up for No. A-180, with material moving to four more Cacalilao locations. Sinclair's No. 22-A Camolote, Panuco, is in gray lime ac 2,065 feet; its No. 14, 2, W. Maguabes is in the Tamasopa at 1,930 feet, with the hole full of dead oil. New England Fuel Oil Co., (Magnolia subsidiary) No. 6 Caballero, Panuco, is in gray lime at 1,235 feet, having had a sensational showing of oil (a pocket) at 1,228 feet. William Neinau Co., No. 9 W. Maguabes is in gray lime with a showing of oil at 1,640 feet; its No. 3 Buena Vista cemented 8-inch in grey lime at 1,700 feet. Transcontinental Petroleum Co.'s No. 145, Lot 2, Cacalilao, is in gray lime at 2,080 feet; its No. 285 is in a similar formation at 1,350 feet. Cia. Petroleum Territorial, No. 41 Salvasuchi is in the San Felipe at 1,615 feet.

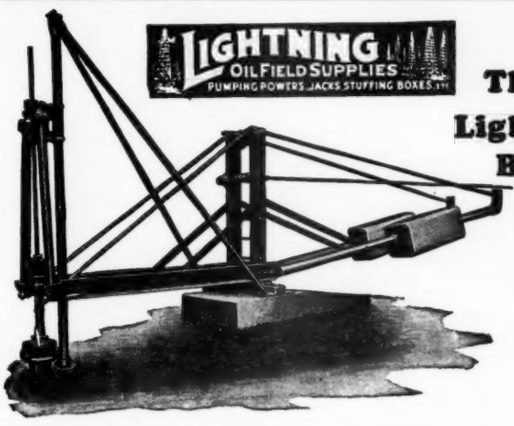
Ebano

In the Ebano sector of the northern fields Mexican Petroleum Co.'s operations follow: No. 23 Ebano is in blue shale ac 120 feet; No. 26 is in gray shale at 80 feet; No. 43 Midway is in caving gray lime, with an oil show at 1,750 feet; No. 53 cemented 8-inch in gray lime at 1,215 feet; No. 58 is fishing a bit in gray lime at 1,647 feet; No. 59 is in gray lime at 1,615 feet; No. 63 is in gray lime at 1,630 feet; No. 70 is in gray lime, showing much gas at 1,484 feet; No. 18 Mendez is in gray shale at 1,030 feet; Nos. 29 and 32 are rigging; No. 124 La Dicha is in gray lime at 1,725 feet; No. 127 is in shells at 1,310 feet; No. 128 is rigging; No. 129 is in gray shale at 1,075 feet; No. 131 is in gray lime, slopping over, at 1,925 feet; No. 134 is in caving gray lime, with the hole full, at 2,132 feet; No. 131 East Dicha cemented 10-inch in gray lime at 1,185 feet; No. 138 is in shale at 350 feet; No. 60 Chijol is in white and black lime at 1,820 feet; No. 71 has run 8-inch in gray lime at 1,490 feet; No. 20 La Pez is fishing in gray lime at 2,075 feet; No. 24-A is in broken gray lime at 2,400 feet; No. 2 Camino is in gray and white lime at 2,550 feet; No. 4 cemented 10-inch in shale and shells at 1,210 feet; No. 7 Margaritas is in gray lime at 2,220 feet; No. 1 Tortuga is in gray lime at 1,550 feet; No. 2 is in caving blue shale, carrying 8-inch, at 1,220 feet; No. 9 Silva is a derrick. National Lines' No. 54 Conteca, in the railway right of way is in lime at 2,355 feet; its No. 62 is in gray lime at 1,555 feet.

Northern Miscellany

In the miscellaneous northern pools the following obtains: In the Limon, south of Ebano proper, Marland interests, through the subsidiary, Cia. Petroleum Franco Espanola is in gray shale at 1,010 feet in its No. 80 Limon; its No. 74 is in shale and lime at 1,340 feet; No. 84 is in gray lime at 1,785 feet; No. 86 is in gray lime at 1,730 feet; No. 91 cemented 8-inch in gray lime at 1,371 feet; and three derricks are up over locations.

In the Topila district, La Corona Petroleum Co.'s No. 22 Topila is in lime



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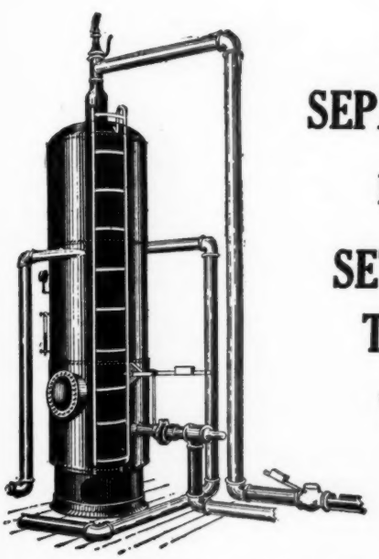

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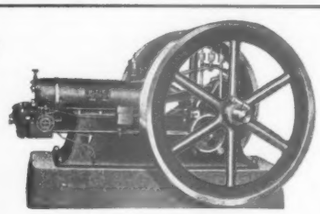

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at 2,622 feet. India Oil Co.'s No. 3 Tobalo is in brown lime, showing oil and gas, at 2,425 feet. The Texas Company's No. 1 Lomo del Pozo is in the Tamasopa, with a small showing, at 3,305 feet; its No. 2, Lot 80 Quebrache, cemented 8-inch in hard gray shale at 2,748 feet. Cosmos Oil Co.'s No. 133, Lot G Corcovado is showing by heads in gray lime at 1,640 feet. International Petroleum Co.'s No. 16, Lot 6 Corcovado, cemented 8-inch in gray lime at 1,332 feet. Sanchez and others' No. 1 Chapital is in shells at 1,100 feet. Intermex Oil Co.'s No. 13, Lot 29 Altamira is in gray lime at 1,210 feet. Mexican Gulf Oil Co.'s No. 72 El Barco is shut down at 2,200 feet in a brown and white lime; its No. 31 Salinas is in gray shale at 750 feet. Mexican Petroleum Co.'s No. H-15 Caracol is in gray shale at 450 feet; its No. 59-V is a derrick; No. 60-V is in gray shale at 840 feet; No. V-61 is in brown lime at 2,300 feet, having had an oil and gas show at 2,180 feet.

South Fields

There is but little activity in the south fields at this time. Huasteca Petroleum Co.'s No. 94 Tierra Blanca is in hard shale and shells at 2,054 feet; No. 95 cemented 10-inch in shale and gumbo at 1,305 feet; No. A-17 Chapopote Nunez is in hard shale and shells at 2,208 feet. Up in the Chinampa, Huasteca's No. 7, Lot 163 is in hard sandy shale at 1,850 feet. Mexican Eagle Oil Co.'s No. 5 Chiconcillo has shut down in hard sandy shale at 2,370 feet.

March Completions

There were 71 wells completed in Mexican fields in March, 61 in the north fields and 10 in the south fields. There were 26 of these completions credited to the production column, with new flush production totaling 37,925 bbls. The new production can be divided as follows: North fields, from 21 wells, 14,885 bbls.; south fields, from 5 wells, 23,040 bbls. All completions are located in established areas.

CANADIAN FIELDS

(Continued from Page 64)

strong flows of water, indicating porous horizons, were struck in the Colorado, Blairmore-Kootenay and Palaeozoic. These wells were both located on very much flatter structures."

It is reported that the Toronto syndicate will this spring make locations for several drilling tests in the Cypress Hills area.

Border Fields

In the Border fields, southern Alberta, Devenish Petroleums, LSD 5, Section 27-5-14w4, is reported drilling at 2,410 feet after setting 10-inch casing at 2,400 feet. The drill is working in the base of the Colorado shales. The company is planning to go 4,000 feet for a thorough test. In the Medicine Hat field, Roth Syndicate No. 2 deep test, Section 17-13-6w4, is down 2,934 feet with 6½-inch casing cemented at that depth and waiting for the cement to harden before drilling deeper.

East of Coutts, Madison Oils, Ltd., of Calgary is moving a rig to holdings in Townships 2-10w4 and 2-11w4 for another test for oil on the Rogers-Imperial structure. The Madison acreage is northeast of the Rogers-Imperial gasser in Section 29-1-11w4, and close to the old Beaver Oil Co. test, which got oil showings in 1914 at 2,600 feet depth. A standard outfit will be used for the Madison test.

On the Quarantine Reserve, near Coutts, Urban Oil, 4-1-15w4, is cleaning out the 3,420-foot hale preparatory to a pumping test which may be made by a Sweetgrass group which have acreage just south of the international boundary on the same structure.

In the Pincher Creek area, southwestern Alberta, Mount Royal Oil Co. No. 1, LSD 4, Section 7-6-1w5, is working on derrick. Work has been delayed owing to a snowstorm, which made roads too heavy for trucking materials to the location on Mill Creek. The test will spud in about May 1. It is reported that Henry L. Doherty & Co., who have acreage in this general area, will drill No. 1 test near Waterton Lakes Park, at the extreme southern end of their holdings.

The latest progress report covering Imperial Oil, Ltd., operations in the Canadian West states that in the Turner Valley Field, Royalite Oil Co.'s No. 7 rotary test, LSD 3, Section 13-20-3w5, is drilling at 1,860 feet. Since the rotary started work, the test has made 51.2 feet per day, with continuous drilling, which is necessary to carry the 11-inch hole without casing.

In the Jumping Pound district, west of Calgary, Imperial-Bow River No. 1, LSD 15, Section 12-25-5w5, is at 5,025 feet with the bit pounding up an old bailer lost in the hole. The original bottom was at 5,080 feet, but caving and the loss of the bailer account for the lesser depth. The 6-inch casing has been lowered to 5,005 feet. In the southern foothills, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, has been filling in to straighten a crooked hole. The bit is now working at 2,173 feet, within 5 feet of the original bottom.

East of Coutts, the crew at Imperial-Erickson Coulee No. 1, LSD 13, Section 8-1-12w4, is fishing for lost slips at 3,570 feet.

On the Ribstone-Blackfoot structure, east central Alberta, Imperial-Ribstone No. 1, Section 5-45-1w4, has finished setting the 10-inch casing and is making hole for the 8¼-inch casing at 3,154 feet. The bit is still in the limestone, with no new showings of oil or gas reported.

In the Alberta foothills, north of the Turner Valley Field, the Hudson's Bay-Marland Oil Co. is reported making preparations for a test in Township 26-6w5, north of the Morleyville settlement.

On the Milk River Dome in southern Alberta, the Ainsworth Oil Co. of Calgary is reported to have started core drilling. Several holes will be put down to map the subsurface, after which a deep test of the structure will be made. H. M. B. Inglis is in charge of the work.

In the Cypress Hills district, southeastern Alberta, the Toronto interests which recently blanketed 80,000 acres west of the Cypress Hills forest reserve, are reported to have filed on an additional 20,000 acres of territory.

In British Columbia, Colonel Warren of Cranbrook has leased 640 acres of the Campsall ranch on the Mission road and will put down a test for oil. Oil seepages have been found at various times on the Campsall ranch. The acreage is close to Cranbrook.

In Manitoba, the well of the Irro Oil Co., near Grandview, has been officially sealed by Dr. C. C. Ross, Federal oil inspector of Calgary, pending a definite test of its capacity. The Grandview well last fall at a depth of 693 feet was reported to have got a fair flow of oil, estimated around 35 bbls. a day. Contradictory reports have been in circulation regarding the actual status of the well, but the most recent development was the reported decision of the Hudson's Bay-Marland Oil Co. to take over 132,000 acres of the Irro holdings with a view t odevelopment. Dr. C. C. Ross and his assistants, T. G. Madgwick and W. Calder, are now reported to be investigating the exact extent of the find.

In the Ontario fields, Union Natural Gas Co. of Chatham has resumed work in the Dawn and Tilbury Fields. In Dawn Township, Union's No 14 has started rigging up on the Turrill farm, 1,500 feet east of No. 13 gasser.

In the Tilbury Field, Union's No. 265 is rigging up on the J. Coatsworth farm, Lot 186, Talbot Road, near Port Alma, in Romney Township. Union's No. 266 is rigging up on the Hugh Shanks farm, Lot 188, Talbot Roard, in the same township.

A deep test is being drilled by a London syndicate on the R. Wilson farm, Metcalfe Township, Middlesex County. The test is down about 1,000 feet, and has encountered a 50-foot vein of rock salt. Oil was apparently expected around 1,000 feet, but it has now been decided to drill 500 feet more, and drilling has resumed.

A further meeting of the Lambton crude oil producers was recently held at Petrolia, Ontario, when the situation in

the Ontario shallow field was discussed. Efforts have been made to secure the restoration of the government bounty on crude petroleum, discontinued in 1925, but little hope of success is entertained at present. Co-operation with the Canadian Manufacturers Association with a view to improving the position of the industry is under consideration.

CANADIAN OPERATIONS BY IMPERIAL OIL, LTD.

CHATHAM, Ontario, Apr. 16.—The latest official summary of Imperial Oil, Ltd. operations in the Canadian West is as follows:

"Imperial Oil, Ltd. is conducting 11 tests in Western Canada through its exploration subsidiaries this season. The petroleum situation in Alberta is more interesting than at any previous time since the oil exploration campaign was inaugurated there several years ago. There are very fair chances of more favorable results in the present year's work than in any previous season.

The Turner Valley Field is much more interesting than any other section. Numerous independent organizations are conducting drilling operations in various parts of the Turner Valley Field. The most important drilling that is being conducted is by the Vulcan, Illinois-Alberta, McLeod and McDougal-Segur outfits. Imperial oil is proceeding aggressively through its exploration subsidiaries, Dalhousie and Royalite.

"Excellent progress is being made on Royalite No. 7, which is located to the north of No. 5. It will be recalled that drilling operations at Royalite No. 5 were abandoned. No. 7 was spudded in on February 12. The rotary drill started at a depth of 170 feet about March 1 and was down 1,637 feet, according to the last reports. It is still about 3,400 feet above the limestone. If this rapid progress continues, the drill should soon reach the producing horizon.

"Royalite No. 6 has been drilled to a depth of 3,132 feet. Operations are now at a standstill awaiting the arrival of the diamond drill that is now operating on Dalhousie No. 1. If this well is brought in, 4½-inch casing will be used to complete the hole. Royalite No. 4 which is termed the "wonder well," is still producing at a rate of about 600 bbls. of crude naphtha each 24 hours. The four other producing wells in this field, namely Vulcan, Illinois-Alberta, McLeod No. 2 and McDougall-Segur, continue to produce at a constant rate and their crude is being taken for the Calgary refinery.

"The Dalhousie wells consist of No. 1, now at a depth of 3,609 feet, which is being finished with the diamond drill, and No. 3 which was abandoned, No. 5 which has been taken to a depth of 3,725 feet and No. 6, which is down to 2,780 feet.

"A drilling rig has been set up for another test at Millarville, in the north end of Turner Valley, near the north branch of Sheep River.

"The test in the Bow Island Field is being abandoned at a depth of 3,950 feet.

"The Erickson Coulee test in the Sweet Grass Field, which is being drilled on Hudson's Bay land, is now down to 3,570 feet. The drill is now in the limestone. A flow of about 10,000,000 feet of gas is coming from two different horizons, and is being used as fuel for the boiler. Drilling operations are continuing, although the outlook is none too hopeful.

"The Ribstone well was at a depth of 2,958 feet, according to the last report, and drilling was continuing in limestone. One showing of oil was encountered which was not commercial, running merely 5 bbls. per day.

"The well in Rice Creek Field is still shut down. This hole is down 5,747 feet and it is the deepest hole in Canada. This operation will start again shortly.

"A well is being drilled in the Highwood district south of Turner Valley. This test is down 2,115 feet and drilling is continuing. Bow River No. 1, which is generally known as the Jumping Pound well, is down 4,979 feet.

"There are no less than 114 tests for prospecting drilling operations in progress or contemplated. Not all of these are drilling at present and some of them are merely locations. Little is heard from the Wainwright Field these days, and, according to recent advices reaching Toronto, there is not much activity there."

FARMINGTON, N. MEX.

(Continued from Page 63)

the Boundary Butte structure, which involved several individuals and oil companies have been dismissed without prejudice on motion of the Government. The passage of the law providing for the leasing of these lands by the last Congress is assigned as the reason for the dismissals. It is reported here that operations will be resumed as soon as crude prices will warrant. At least one producing well from the Shinarump sand has been found on this structure, and the rig is still there, and a watcher kept in charge. Work was suspended about two years ago, when the Government instituted the suits.

KANSAS FIELDS

(Continued from Page 52)

NW, Section 23-31-10, is producing 20 bbls. from sand 1,639-50 feet.

Greenwood County

Rhodes and others' No. 2 Broddock, NW cor., Section 23-22-12, is a new location. Aikman and others' No. 1 Pavemire, SW cor. NE NE, Section 22-22-13, is drilling at 650 feet. Tidal Oil Co. is building the rig for No. 31 Hull, CEL NE SE NE, Section 34-25-8. Wilson and others have moved out the machine for No. 1 Olson, C SE NW, Section 28-26-9.

Empire Gas & Fuel Co.'s No. 5 Edwards, NE cor. NW NW, Section 21-23-11, had sand 1,918-66 feet and after a shot of 35 quarts made 75 bbls. No. 6 Edwards, SW cor. NE NW, Section 21-23-11, was shot with 240 quarts and is producing 150 bbls. from sand 1,884-1,-935 feet. Patterson and others' No. 1 Cox, SE cor. NE, Section 16-23-12, is dry at 1,895 feet. Chambers, Spencer and others' No. 1 Bigler, SE cor. NE, Section 26-23-12, has been abandoned at 1,826 feet. McGinnis and others' No. 1 Hammond, SW cor. NW, Section 10-25-10, is dry at 2,265 feet.

Lyon County

Kellogg Drilling Co.'s No. 1 Lamotoux, NE cor NW NW, Section 26-21-10, is a dry hole at 2,640 feet.

Marion County

Sinclair Oil & Gas Co. has the rig on the ground for No. 1 Bevens, NE cor. SE, Section 21-17-4. Winters, Harwood & Phillips Petroleum Co.'s No. 1 Razineck, SW cor. NW, Section 22-17-4, an old well being deepened, is now drilling at 2,398 feet.

T. B. Slick and others' location for No. 1 Rogers, NW cor. SE SE, Section 20-17-1, has been abandoned. Sheedy and others' No. 2 Berry, NW cor. SE SW, Section 13-21-4, is dry and abandoned at 2,400 feet.

Morris County

Nicolls and others' No. 1 Hammer, NW cor. SE NW, Section 14-16-7, is a 2,000,000 foot gas well producing from sand at 1,448-59 feet.

Reno County

T. B. Slick and others' No. 1 Dutton, NE cor. SW, Section 25-26-9, an old well, is drilling deeper at 4,345 feet.

Rice County

Phillips Petroleum Co.'s No. 1 Miller, NE cor. NW NE, Section 3-21-6w, has been abandoned at 3,504 feet.

Sedgwick County

Johnson and others' No. 2 Hansaber, NE cor. NW SW, Section 29-29-2, is a failure, being abandoned at 3,593 feet.

Stafford County

Kismet Oil Co. and others' No. 1 Richardson location, C SW, Section 26-22-11, has been abandoned.

Sumner County

Roxana Petroleum Co.'s No. 1 White,

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SW cor. NE SE, Section 9-34-2, is dry and abandoned at 3,920 feet.

Woodson County

Fields & Cross' No. 1 Weide, SW cor. SE, Section 17-25-14, is a 10-bbl. well in sand at 1,333-45 feet.

OKLAHOMA FIELDS

(Continued from Page 52)

Section 11-9-5, Earlsboro Pool. The rig is being moved in for No. 3 Stidham, SW cor. SE NE, Section 11-9-5. The tools are being moved in for No. 1 Davis, NE cor. NW NW, Section 13-9-5. No. 2 Davis, CNL E half NE NW, Section 13-9-5, is also being rigged up. The Producers & Refiners Corp.'s No. 11 Amos "A," SW cor. NE SE, Section 31-8-8, Wewoka Pool, was completed for 1,574 bbls. from the Hunton lime at 3,904-4,023 feet and the Wilcox sand at 4,142-50 feet.

Mid-Kansas Oil & Gas Co. made location for No. 1 Anderson, NE cor. Section 14-9-5, Earlsboro Pool. Roxana Petroleum Corp. has the rig on the ground for No. 1 Young, NW cor. NE NW, Section 13-9-5. Gypsy Oil Co. has dug the cellar for No. 1 Wisner, NW cor. NE, Section 13-9-5. Magnolia Petroleum Co. has made location for No. 2 Jamseay, SE cor. SW SW, Section 12-9-5. Gypsy Oil Co has the cellar dug for No. 1 M. Noble, SW cor. NE, Section 12-9-5. The cellar is also dug for No. 1 Sango, SW cor. NE, Section 1-9-5. Barnsdall Oil Co. dug the cellar for No. 3 D. Davis, NE cor. NW SE, Section 11-9-5. Twin State Oil Co. made location for No. 1 Hearn, SE cor. NE SE, Section 2-9-5. Red Bank Oil Co. has the rig up for No. 1 Sango, SW cor. NW NE, Section 1-9-5. In the Bowlegs Pool the Indian Territory Illuminating Oil Co. is rigging up rotary tools at No. 12 Goforth, NE cor. SW NE, Section 15-8-6. The rig is being built for No. 3 Bowlegs, NW cor. NE, Section 22-8-6. The rig is also being erected for No. 2 Billington, NE cor. NW, Section 22-8-6. Carter Oil Co. has built the rig for No. 2 McCeisey, SE cor. NE NE, Section 21-8-6. Atlantic Oil Producing Co. is building the rig for No. 7 Jones, NW cor. NE SE, Section 16-8-6. The Texas Company is putting up the rig for No. 3 Reed, NW cor. SE NE, Section 14-8-6. The rig is also being built for No. 4 Reed, NE cor. SW NE, Section 14-8-6. T. B. Slick and Mid-Continent Petroleum Corp. made location for No. 1 Tiger, NW cor. NE NW, Section 1-8-6. Carter Oil Co. is building the rig for No. 6 Frazier, SE cor. NE NW, Section 3-9-6, in the Seminole Pool.

T. B. Slick's No. 1 Cudjo, SW cor. NE NE, Section 28-7-7, has been abandoned at 2,550 feet, having missed the shallow sand. Amerada Petroleum Corp.'s No. 4 Anderson, SW cor. NW, Section 15-9-5, Earlsboro Pool, made 2,774 bbls. the first 24-hour gauge from the Wilcox sand at 4,255-59 feet. McGraw & Baughman and others' No. 3 Anderson, SW cor. NW SW, Section 15-9-5, set the surface pipe and has been abandoned. Gypsy Oil Co.'s No. 1 Smith, NW cor. NE, Section 15-9-5, had the Earlsboro sand at 3,488 feet, drilled in to 3,504 feet and swabbed 102 bbls. the first 24 hours.

Carter Oil Co.'s No. 5 Stewart, SW cor. NE SW, Section 35-10-6, Searight Pool, lost the hole on a fishing job and was abandoned at 3,365 feet. No. 1 Simpson, NE cor. SW SW, Section 35-9-6, in the Seminole Pool, made 620 bbls. from the Wilcox sand at 4,132-46 feet. No 3 Lukes, NW cor. NE NE, Section 27-9-6, topped the Wilcox sand at 4,182 feet, drilled in to 4,198 feet and shot 20 quarts, the production the first 24 hours being 690 bbls. No. 4 Davis, NE cor. SE NE, Section 4-9-6, flowed 2,950 bbls. from the Wilcox sand at 4,284-4,306 feet. Turman Oil Co.'s No. 2 L. Jones, NE cor. SE NE, Section 34-9-6, made 1,995 bbls. the first 24 hours from the Wilcox sand at 4,060-80 feet. Tidal Oil Co.'s No. 2-A D. Fixico, NE cor. SE NW, Section 26-9-6, got the top of the Wilcox sand at 4,130 feet, drilled to 4,143 feet and flowed 550 bbls. by air. No. 6-A Fixico, NE cor. NW, Section 26-9-6, was shot with 40 quarts in the Wilcox sand at 4,053-70 feet and produced 2,110 bbls. No 8 T. Harjo, NW cor. SW SE, Section 23-9-6, was given a shot of 40 quarts and swabbed 500 bbls. from the Wilcox sand at 4,125-66 feet.

Indian Territory Illuminating Oil Co.'s No. 12 Bowlegs, SE cor. Section 26-9-6, flowed 684 bbls. naturally from the Wilcox sand 4,091-4,103 feet. Sinclair Oil & Gas Co. and Transcontinental Oil Co.'s No. 4 P. Fixico, SW cor. NW, Section 23-9-6, swabbed and flowed 745 bbls. after it was shot with 20 quarts in the Wilcox sand at 4,237-72 feet. Roxana Petroleum Corp.'s No. 2 Lashley, SE cor. NE, Section 22-9-6, had the Wilcox sand at 4,305-18 feet, was shot with 30 quarts and swabbed 180 bbls. Mid-Continent Petroleum Corp.'s No. 5 Rentie, NW cor. SE, Section 14-9-6, was shot twice, once with five quarts and once with 40 quarts and made 300 bbls. from the Wilcox at 4,270-92 feet.

Magnolia Petroleum Co.'s No. 4 Norvell, SE cor. SW, Section 14-8-7, lost the hole at 3,245 feet and is producing 5 bbls. from sand at 3,155-62 feet. Papoose Oil Co.'s No. 1 Island, SE cor. SW NW, Section 21-9-7, is pumping 60 bbls. from sand at 3,386-88 feet. Winona Oil Co.'s No. 2 Smith, NE cor. NW NE, Section 18-9-8, has been completed for 1,500,000 feet of gas in sand at 3,252-61 feet. Dixie Oil Co.'s No. 3 M. Walker, SW cor. NE SE, Section 29-8-8, in the Wewoka Pool, had top of the Hunton lime at 3,832 feet, drilled to 3,964 feet and after being shot with 10 quarts made 65 bbls.

Carter Oil Co.'s No. 1 Wise, NE cor. Section 23-8-6, Bowlegs Pool, flowed 3,510 bbls. from the Wilcox sand at 4,435-38 feet. Sinclair Oil & Gas Co.'s No. 1 Bowlegs, NW cor. NE SE, Section 22-8-6, had top of the Wilcox sand at 4,299 feet, was drilled to 4,305 feet and swabbed and flowed 1,075 bbls. the first 24 hours. Sinclair Oil & Gas Co.'s No. 1 Adam, NE cor. SE SE, Section 22-8-6, had top of the Wilcox sand at 4,297 feet, drilled to total depth of 4,306 feet and was plugged back to 4,304 feet and made 705 bbls. Amerada Petroleum Corp.'s No. 6 Rascoe, NW cor. SW NW, Section 15-8-6, had a maximum production of 5,495 bbls. from the Wilcox sand at 4,061-4,102 feet.

Pottawatomie County

Tidal Oil Co. made location for No. 1 Pool, NE cor. NW, Section 9-9-5, Earlsboro Pool. Barnsdall Oil Co. made location for No. 2 Gibson, NW cor. NE, Section 9-9-5. Twin State Oil Co. is building the rig for No. 1 Spangy, SW cor. SE, Section 19-7-4. Location was made for No. 2 Spangy, SE cor. SW SE, Section 19-7-4. Shaffer Oil & Refining Co. has the rig on the ground for No. 1 Phillips, SE cor. NW SW, Section 19-7-4. Mid-Continent Petroleum Corp made location for No. 3 Doyle, SE cor. SW, Section 19-7-4. Location was made for No. 4 Doyle, SW cor. Section 19-7-4. Continental Oil Co. is putting up the rig for No. 1 Doyle, SW cor. NE SW, Section 19-7-4. Magnolia Petroleum Co. made location for No. 1 Bullock, SE cor. Section 18-7-5. Location was made for No. 2 Talley, NW cor. SW NW, Section 19-7-4. The location for No. 1 Davis was made NW cor. NE, Section 30-7-4 Location for No. 2 Davis was made NE cor. NW NE, Section 30-7-4. Location for No. 1 Adkins, SE cor. NE, Section 24-7-3, was staked. Pure Oil Co. made location for No. 2 Doyle, NW cor. Section 30-7-4. Pierce Oil Corp. made the following locations: No. 1 Bickford, NW cor. NE NE, Section 30-7-4; No. 1 Ward, NW cor. NE NW, Section 30-7-4, and No. 1 Saunders, NE cor. SE NE, Section 25-7-3.

White Eagle Oil & Refining Co abandoned location for No. 1 Hodges, SE cor. SW, Section 6-7-5. Phillips Petroleum Co.'s No. 3 Gram, NW cor. SW SE, Section 9-9-5, Earlsboro Pool, was completed for 4,117 bbls. from the Wilcox sand at 4,316-27 feet. L. C. Hivick abandoned the location for No. 1 Harjo, SE cor. Section 36-9-4.

Grady County

Carter Oil Co. made location for No. 3 Carter-Kerans, NW cor. SE, Section 21-3-5w. Location was made for No. 2 Spaulding, NW cor. SE NE, Section 21-3-5w. Location was staked for No. 1 Wall, NW cor. NE, Section 21-3-5w. Magnolia Petroleum Co. made location for No. 6 Harrison, NW cor. NE NE, Section 28-3-5w. Carter Oil Co. made location for No. 8 Wha, NW cor. SW NE, Section 34-3-5w.

Magnolia Petroleum Co.'s No. 1 Anderson, SW cor. NE, Section 31-4-5w, has been abandoned at 4,310 feet. Marland Oil Co.'s No. 1 Phipps, NW cor. NE, Section 7-3-5w, is a 5,000,000-foot gas well in sand at 1,810-28 feet. Standly Oil & Gas Co.'s No. 1 Hitchcock, SW cor. NE, Section 14-3-5w, is a dry hole at 2,705 feet. Magnolia Petroleum Co.'s No. 5 Harrison, NE cor. SE NE, Section 28-3-5w, is producing 7,000,000 feet of gas from sand at 1,902-09 feet.

The Prairie Oil & Gas Co. made location for No. 3 Russell, NW cor. W half SW NE, Section 21-3-5w, also for No. 4 Russell, NE cor. NW, Section 21-3-5w.

Stephens County

Beard & Cobb's No. 1-A Dierkes, SW cor. NE NW, Section 13-2s-8w, has been completed for 15,000,000 feet of gas from sand at 1,505-23 feet. Fort Ring Oil Co. and L. Sykes' No. 3 Taliaferro, NW cor. SE SE, Section 28-1s-8w, had sand at 2,658-60 feet and is making 55 bbls. Winkler & McQueen's No. 1 Clarkson, SW cor. SE NW, Section 30-1s-8w, has been abandoned at 2,224 feet. David Malernee's No. 3 Burke, SW cor. SE NE, Section 34-1s-8w, is producing 65 bbls. from sand at 1,651-60 feet.

Tillman County

P. C. Dean and McDowell & Lewis' No. 1 W. Deaner, C SE SE Section 21-3s-16w, has been abandoned at 2,710 feet.

SOUTHWEST WILDCATS

(Continued from Page 54)

Ball Survey, Block 19, NW cor., is shut down at 821 feet.

Caldwell County

Sun Oil Co.'s No. 1 Talley, Swearingen Survey, 650 feet to northeast lines and 1,675 feet to southeast lines, is drilling at 2,317 feet, with elevation 518 feet. Lou Gould Sheddan's No. 1 W. F. Davis Salt Flats, is rigging up. Fred Adams No. 1 Walter Ellison, near Seawillow, total depth 2,090 feet, has set casing at 2,016 feet to make a test. Sutton & Smith's No. 2 Robert Carter, G. Hinde Survey, bailed at 2,368 feet and got some gas and are now deepening to the Edwards.

DeWitt County

McNeil & Matthews No. 1 A. D. Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is drilling below 1,000 feet which has showing at 640 feet. Empire Southern Oil Co.'s No. 1 C. G. Smith, 8 miles southwest of Cuero, has been abandoned at 2,441 feet.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, located 700 feet to north line and 2,000 feet to east line, is drilling at 1,942 feet.

Frio County

P. A. Neilan's No. 1 Blackaller, James Gouley Survey, has 8-inch lowered full way over drill stem and is ready to fish.

Fayette County

La Fayette Oil Co.'s No. 1 Marquardt, J. R. Phillips Survey, 976 feet to northwest lines and 400 feet to southwest lines, is shut down for repairs in the Yeagua.

Gonzales County

Bristol Oil & Gas Co.'s No. 2 Denman, A Zumwalt Survey, is shut down at 807 feet. Martin Oil & Development Co.'s No. 1 Preston, near Cheapside, Pace league, is shut down at 1,540 feet. E. Lee Moore's No. 1 Elder, is drilling below 2,240 feet. Joe Bruner's No. 1 Vaughan, Kent Survey, 200 feet to west line and 300 feet to south line, is reaming at 1,040 feet to set casing and make test.

Guadalupe County

Pat Armstrong's No. 1 Dale is shut down at 1,652 feet. E. A. Lain's No. 1 Weinert, W. K. Estell Survey, located 150 feet to center of north line, is shut down at 950 feet for minor repairs.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, has completed rigging up with new rig and has set casing to shut off water in preparation to making a test, total depth 1,120 feet.

Karnes County

Alamo Drilling & Leasing Co.'s No. 1 Szalwinski, L. Manchaca Survey, 500 feet to northeast lines and 200 feet to southeast lines, is coring at 1,550 feet in what is believed to be the Cook Mountain, which was topped at 1,450 feet.

Kerr County

Walker-Van Duyn's No. 1 Leigh, Survey 38, at 500 feet north of river and 150 feet south of railroad, is fishing at 2,250 feet.

Kimey County

W. A. Stephens and others' No. 1 Jim Clamp, Survey 346, at 5,362 feet to west line and 5,674 feet to south line of survey, is drilling at 550 feet. Havelin Oil Co.'s No. 1 test, 18 miles from Del Rio, is fishing at 4,305 feet for bailer in black shale.

Lampasas County

Davis-Bullock's No. W. H. Bunch, 8 miles north of Lampasas, is drilling at 700 feet. Smith and others' No. 1 Faught, 2 miles from Nix and 12 miles west of Lampasas, is drilling at 300 feet.

Lee County

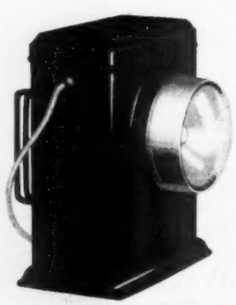
Edwards-Plunkett's No. 1 Adolph Wachemann, Thomas Kinney league, three-quarters of a miles west of Monheim, lost hole at 2,130 feet when derrick was pulled in while pulling drill stem, and will probably abandon hole. M. O. Ricketts' No. 1 Sanders, Joseph Maximillian league, 250 feet to SE cor., is drilling at 800 feet. Lehmann and others have abandoned location made in the James Nimmo Survey.

Live Oak County

W. S. Stoval-W. W. Kelly's No. 1 Stewart, William J. Cannon Survey, 200 feet west of Nueces River, is preparing to drill. Warren Hunt's No. 1 McNeil, Jane Curry Survey, 4,000 feet west of

(Continued on Page 154)

Super-Illumination, Safe, and Low-Priced



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Scientifically designed for super illumination. Triple silver plated reflector, especially designed Mazda bulb, lens ground from select clear glass—all these elements precisely adjusted according to Delta standards for powerful light.

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And you make all the saving. ODEE pipe is furnished in double lengths with the ends cut smooth and beveled for perfect joints—reduces field-welding almost 50%. It carried our guarantee of utmost service, at prices that save you 1/3 or more. With a reasonable down-payment, the line can be financed out of income.

These are a few reasons for the popularity of ODEE Pipe for Gas Lines. It is more and more recognized as standard practice where speed and economy are essential. Write, wire or 'phone for quotations.

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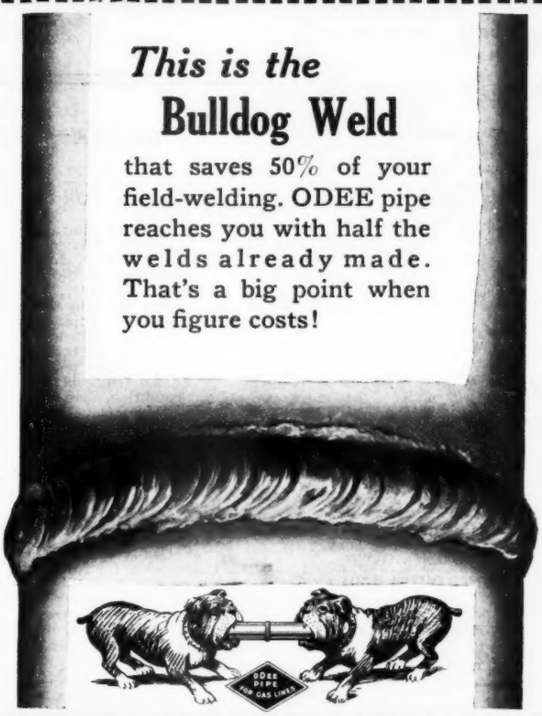
This is the
Bulldog Weld
that saves 50% of your field-welding. ODEE pipe reaches you with half the welds already made. That's a big point when you figure costs!
ODEE PIPE FOR GAS LINES

Hovalco—Homestead Valves
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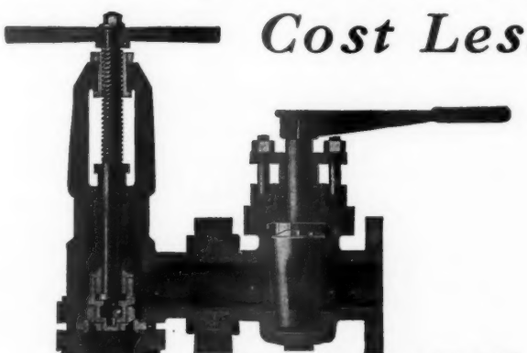
Cost Less In Dollars Per Year



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5. Ball seat of Hovalco insures a tight joint. Seat and disc cannot get out of line.
6. Experience shows that the Homestead Hovalco Combination requires less attention, and remains tight longer than any other combination known.
7. Homestead Quarter-Turn Valves can also be used singly on low pressure and oil field boilers where only a single blow-off valve is required.

Also full round opening refinery type valves for satisfactory service on hot oil and vapor lines

The catalogue shows a full line of better valves—ask for one.

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Beacon Oil Co.
Sinclair Refining Co.

Homestead Valve Manufacturing Company, Homestead, Pa.

HOMESTEAD

PRODUCTS: Quarter Turn Valves—Straight-Way Three-Way Four-Way Types—Full Round-Way Valves—Cast Steel Refinery Valves—Lubricated Valves—Hovalco Blow-Off Valves-Protected Seat Globe Valves B&O Pat.—Protected-Seat Hydraulic Operating Valves

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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FOR SALE—EQUIPMENT

26,000 FEET 4-inch line pipe, 10½-pound. Good condition. Kansas delivery. Box 1992, Tulsa, Okla.

USED LINE PIPE FOR SALE
20,000 ft. 2 inch line 11c.
15,000 ft. 2½ inch 11½ thread 12c.
7,000 ft. 3 inch line 19c.
7,000 ft. 4 inch line 30c.
Prices f.o.b. car, Corsicana, Texas.
Acme Pipe & Supply Co. Corsicana, Tex.

FOR SALE
Five Deane Triplex pumps, 5x8.
One No. 5, 1 No. 9, 1 No. 11 Sweetland oil filters.
Two 10-inch S. Roturbo cetnrifugal pumps.
Six 10-inch S centrifugal pumps, steam turbine.
Storage tanks, various sizes. Send for list.
Send us your inquiries for items not listed. We buy your idle equipment.
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USED LINE PIPE AND CASING FOR SALE
7—25-h.p. used gas engines.
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15,000 ft. 5⅜-in. used casing.
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75,000 ft. 3-in. used line pipe.
50,000 ft. 4-in. used line pipe.
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For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg.,
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STANDARD RIG FOR SALE
New 120-foot standard rig, complete; has just drilled one well; good 6-inch Marion rig irons; set Marion iron bull wheels; set Lucy calf wheels; 65 H. P. Lucy boiler; new style Ajax engine complete; O. W. S. engine; two 250-bbl. steel tanks; underreamers; elevators, gas burners; belts; casing line; crown block; casing clamps and considerable other drilling equipment; all in first-class condition; practically as good as new and offered at a great discount. Write R. S Randerson or H. L. Berry, 318 Braniff Building, Oklahoma City, Okla. Telephone Maple 0778.

FOR SALE—USED CASING LINE PIPE AND SUPPLIES
35,000 feet 2-inch line pipe.
40,000 feet 2½-inch, 11½-thread tubing (suitable for line.)
10,000 feet 3-inch line pipe.
20,000 feet 4-inch line pipe.
3,000 feet 5⅛, 17-pound casing, National.
1,500 feet 10-inch, 35-pound casing.
Complete rotary drilling rigs.
All material is in first-class condition and can be loaded at once from our Texas yards.
Write or wire for prices.
AMERICAN SUPPLY CO.
P. O. Box 101
Mexia, Tex.

SIX-INCH Lucy Special Rotary complete, nearly new; 2,300 feet 4-inch drill stem; lot of bits, extra rotary parts, etc. $4,000. 218 feet new 20-inch casing, $900. S. H. Weber, 310 Colo., Bldg, Denver, Colo.

SUPERIOR SERVICE

FOR THE PRODUCER

Our newly equipped Landis pipe machine shop and yard enables you to get the best in second-hand line pipe and casing.

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Phones—Yard, 6909; Office, 2-3052; L. D. 201; Residence, 3-1771-7987.
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Give us a ring for any surplus material you have to offer.

FOR SALE—EQUIPMENT

FOR SALE

Two (2) Rathbun-Jones three-cylinder vertical gas engines, 12¾x15-inch, direct connected to 75-kilowatt, 250-volt direct current generator, with five panel slate switchboard, board equipment, including two watt hour meters, volt meters and ammeters, generator switches and distribution panel.
All equipment in first-class condition, now in operation. Must move in 30 days.

THE SMITH GAS ENGINEERING CO.
Dayton, Ohio.

FOR SALE REASONABLY PRICED
2—Complete Cracking Units (towers, condensers, high pressure safety valves, tankage). Also, 3—500 bbl. stills good condition; 4 towers ¼"x4'-15', 20 steam pumps various sizes; good condition, other misc. refinery equipment. For complete list and prices write Box 1088, Little Rock, Ark.

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Five Root's Exhausters or Gas Pumps. Capacity 1,500 cubic feet per minute at five pounds pressure, direct connected to vertical self oiling Troy Steam Engines, in excellent condition Box B-805, The Oil and Gas Journal, Tulsa, Okla.

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GENERAL ENGINEERING & MFG. CO.
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WILL INVEST $25,000 and services in good paying business. Full particulars essential in first letter. Box B-801, The Oil and Gas Journal, Tulsa, Okla.

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Will give 5,000 acres for a well with 50-cent bonus and has well about the center tract that had strong pressure gas and good showing of oil. For further information, wire or write F. P. Simpson, 517 Worth Building, Fort Worth, Texas.

HAVE YOU a rig to rent for acreage, or will you drill a wildcat block of acreage in southwest Texas? If you will, I have what you want, with good geology and well located. Address W. S. Poole, Beeville, Tex.

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LAKE MINNETONKA HOME
Beautiful lake home situated on Lake Minnetonka, 20 miles from Minneapolis; 2½ acres large trees; 400 feet lake shore; 8-room furnished modern home. Exceptional value. E. G. Perine, 1411 University Ave., S. E. Minneapolis, Minn.

FOR SALE
Have lease contracts on 4,000 acres, Joplin, Picher, Lead & Zinc District. Low Royalty. No Money required except for development. Will assign all or any part on liberal development requirements.
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Box 365, Columbus, Kan.

FOR Complimentary copy of "The Promoters' Handbook" a leaflet on financing, write to Amster Leonard, 617 Central Ave., East Orange, N. J.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

FREE DRILLING contracts in Dawson and Cochran Counties, Texas. W. J. Williams, Box 235, Plainview, Tex.

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2,000 ACRE block, good geology, have drilling equipment on lease. In the trend, good field laying northeast and southwest. An attractive proposition to parties furnishing money, J. J. Manson, Burlington, Kans.

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For Sale—The control'ing interest in a successful Furniture Business, doing over $100,000 net yearly. Located in a beautiful Mid-West Metropolitan city, close to one-half million population. This store is over 25 years old and the business has a good personell and is well organized, so that knowing this business thoroughly would not be so essential. A wonderful opportunity for a man with 75 to 100 thousand to make a safe investment with a sure profit. This will bear the strictest investigation. Write to BOX B-813
The Oil and Gas Journal, Tulsa, Okla.

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NOTICE—Will give one third interest in 3,000 acres of leases, to any one that will furnish me $5,000 to finish my well. The well is down 830 feet, went through oil sand at 687 feet. If I don't get oil, will deed them 40 acres of land, and one number 30 special Spotter tractor rig, with tools. S. Stephens, Box 512, Bushnell, Florida

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WANTED

SOMEONE to promote or develop an oil tract in McDonough County, Illinois, of 240 acres; 505 feet to oil sand and 50 rods from oil well. N. W. Wear, 510 Bellingham National Bank Bldg., Bellingham, Wash.

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Wanted—Complete equipment for a 5,000-10,000 gallon natural gasoline plant.
Wanted—Wet natural gas on royalty or partnership basis.
Write or call Hotel Mayo, Room 623, Tulsa, Okla.

ACCOUNTS—We buy or collect bad accounts, notes or claims anywhere. Mercantile Agency, 221 Rule, Amarillo, Tex.

WANT to buy producing royalty. Oklahoma or Texas preferred. Must stand strict investigation and be real bargain. $25,00 to $35,000. A. H. Livingston, Box 1214, Muskogee, Okla.

ROYALTIES WANTED — Producing, offset or under drilling wells. Give description, price, age and full particulars. Box 1359, Tulsa, Okla.

ROYALTIES WANTED—Producing-offset, and under drilling wells; also producing properties and leases. J. Ben Brown, 115 North Vancouver St., Tulsa.

WANTED—Drilling contractor to drill on twenty acre lease, one half mile west of Wilcox production in the Earlsboro field. Address, Box 255, Earlsboro, Okla.

WOULD like to hear from party with good business for sale; state price and terms; all correspondence confidential. Fuller Land Man. Wichita, Kans.

WANTED—WET GAS CONTRACTS
Gasoline producer will give interest in plant or overriding royalty. Give volume and gasoline content. Wm. H. Allen, contract dept., 1215 Detwiler Bldg., Los Angeles, Calif.

WANTED

WANTED—Reliable drilling contractor to drill well on large West Texas block on choice structure, approved by highest class geologists. Will pay part cash, part acreage, real opportunity. John Hill, P. O. Box 683, Fort Worth, Tex.

POSITION WANTED

REFINERY accountant, age 30, 12 years' experience in refining; formerly superintendent of skimming plant; for the last five years in direct charge all refinery accounting for large corporation. Box B-815, The Oil and Gas Journal, Tulsa, Okla.

MAN, age 40, wants position as lease buyer for American or foreign company or man; has A. B. degree from University of Michigan and LL. B. degree from Harvard Law School; 13 years' business experience, including oil experience; understands oil geology and has conservative judgment. Tallman, Room 53, Kirkwood Hotel, Des Moines, Iowa.

LAND AN TITLE MAN, 35, unincumbered, with 10 years of competitive oil field experience, and thoroughly familiar with all forms of oil field negotiations, conveyancing, contracting and title problems; legal and land department matters; desires connection with royalty buyer or operator, individual or organization, preferably in a capacity requiring or permitting personal contact with the different Mid-Continent fields. Would consider non-salaried basis with such an arrangement. Address Box B-816, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED TITLE and land record man, drilling contracts; steady and thoroughly reliable; industrious. Box B-812, The Oil and Gas Journal, Tulsa, Okla.

REFINER—Specialized in small refinery management, manufacturing petroleum specialties. Will accept position or financial interest in small plant with possibilities. Box B-811, The Oil and Gas Journal, Tulsa, Okla.

CIVIL ENGR. 5 years experience in farm and pipe line surveys, large tank grades, inventory work, etc. Desires position with producer or pipe line company. Go anywhere. Best references. Box B-810, The Oil and Gas Journal, Tulsa, Okla.

COMPETENT CONSTRUCTION engineer with university education and 10 years oil refinery construction experience erecting modern refinery equipment, pipe still, cracking plants, lubricating plants, etc. Foreign work preferred. Box B-792, The Oil and Gas Journal, Tulsa, Okla.

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HELP WANTED

WANTED—Experienced still man for small plant, who understands construction work and treating processes. Apply by letter. Alberta Refining Co., Ltd., Coutts, Alberta.

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35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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Buys and sells Texas Oil Leases and Royalties.

FOR SALE—One-sixtieth interest in 100-acre lease which has 40,000,000-cubic foot gas well and three possible producing sands on it. Priced for quick sale as additional pipe line facilities will double price in two months. W. R. Wight, Box 203, Hebbronville, Tex.

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WELL LOCATED royalties in Pecos, Upton, Terrell, Culberson, Jeff. Davis, Blanco, Presidio and Gaines, cheap. E. Everetts, 901 Buchanan St., Amarillo, Tex.

ROYALTIES, leases, bought, sold, exchanged. Rifner-Reynolds, 220 Rule, Amarillo, Tex.

PECOS COUNTY ROYALTY—Sec. 49, Blk. 11, H. & G. N. Ry Co., 618 acres, 2 miles west of where Orient Ry. crosses Pecos River; lease owned by The California Co.; will sell 1/64th for $1 acre; reasonable terms. Owner, L. W. Stieren, 815 Alamo Bank Bldg., San Antonio, Tex.

CONTROL offset royalty to 2,500-bbl. producer, also producing oil and gas royalties in Oklahoma fields. Only real purchasers wanted. P. O. Box 825, Tulsa, Okla.

ROYALTY CLEVELAND CO. under drilling well; also other royalty cheap. Woldrige, 211 West Tenth, Oklahoma City, Okla.

SMALL ROYALTY interest for $200. Well drilling by Wilcox in Pottawatomie County. Box 1037, Tulsa, Okla.

WE OFFER an unusually attractive and unique proposition to purchase royalty interests. Superior Oil Royalty Co., Lubbock, Tex.

PANHANDLE ROYALTIES
Under wells drilling on good structure. Small or large interests. Fifty dollars or more; deed direct to buyer.
L. B. SEIDLER
819 Oliver-Eakle Bldg,
Amarillo, Tex.

FOR SALE—Part of royalties on 71½ acres, northeastern part Fayette County. A. Baker League. Write A. H. Becker, Jr., Route No. 2, Box 65, Carmine, Tex.

OIL LEASES and royalties, Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Dallas, Tex.

LEASES—PRODUCTION

LAREDO
Three gas lines are now taking gas from this district. I have some attractive buys in oil and gas properties—leases, royalties, drilling blocks and wildcat acreage.
M. ELDER & CO.,
Hamilton Hotel, Laredo, Tex.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

ARE YOU GETTING in on the next big Oil Field in Texas? Four wells to be drilled this year, within 50 miles of Fort Worth. Ask R. B. McIlroy of P. O. Box 18, Grandury, Hood County, and he will tell you about it.

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culberson Counties.
Drilling blocks. Leases. Royalties. Ranches in fee.
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LEASES—PRODUCTION

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

NEW OIL FIELD. Shallow drilling, one well standing full of oil, one well now drilling, several new well locations made. Will sell a few leases at $3 to $5 per acre. P. O. Box 96, Bossier City, La.

DRILLING BLOCK secured on approved acreage and well supervised; no bonus; we keep some acreage as fee. Nicolle, Petroleum Geologists and Operators, Box 1720, Fort Worth, Tex.

OMER MCKOWN AND SON
Maud, Oklahoma
Buy, sell and broker leases and royalty southeast Seminole and south Pottawatomie Counties, Okla.

FOR SALE or lease—Very large tract placer-dredging ground; 25,000 h. p. water power.
Box 55, Santa Fe, N. Mex.

TENN. ACREAGE—In active field will sell or let for drilling on the parts, on pipe line. For details, Frese 419-13, Bowling Green, Ky.

HOLDERS OF New Mexico oil assignments—We are prepared to furnish you certified copies of the leases under which your assignments were given. Without the lease you do not know what your contract with the state really is. Better find out. Staplin & Staplin, Santa Fe, N. M.

80 ACRE LEASE for sale, or will give interest for development. Oil on three sides; several offsets to be drilled. One good well drilled; one drilling. Some equipment. Sure shot. Write or wire E. C. Johnston, 226 W. 2nd St., Garnett, Kans.

FOR SALE—Ten year leases, fifty cents rental, in Alfalfa County, Okla. Write for list. Mansfield & Brakey, Cherokee, Okla.

FOR SALE—Oil leases in Cimarron, Texas, Beaver and Woods counties. Orbee Lease Co., 1114 Colcord Bldg., Oklahoma City, Okla.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

"IN THE TREND"
Southeastern New Mexico and west Texas counties—Lea, Eddy, Chaves, Gaines, Andrews, Winkler, Loving, Ward, Culberson and Pecos Counties, oil and gas leases, royalties and drilling blocks. We buy and sell. F. S. Blackmar, P. O. Box 541, Roswell, N. Mex.

FOR LEASE—80 acres near Sunny Side, Idaho. It is claimed a large anticline comes through where this land is. Wm. Burger, 4761 Milentz Ave., St. Louis, Mo.

AMARILLO PANHANDLE OIL FIELD
Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

OPERATORS—Will block 5 yr. form 88 leases Montgomery County, Mississippi, 2 yrs. free, 25c rent next 3 yrs. at 5c acre. Brooks, 282 S. Front St., Memphis, Tenn.

RATLIFF & CO.
Oil leases and royalties. 630 and 631 Security Bldg. Phone W. 7881, Oklahoma City, Okla.

FOR SALE—Selected oil and gas leases adjoining producing and drilling leases in Barren County, Kentucky Prices right. L. W. Preston, Glasgow, Ky.

LEASES—PRODUCTION

YOUR OPPORTUNITY TO SECURE INTEREST IN WILCOX TEST

I contemplate the drilling of a well to the Wilcox sand on an 80-acre lease located in the North Central portion of Okmulgee County, about June 1st. Have geological map and report showing splendid Glenn and Wilcox structure. Am offering 30 units in this 80-acre lease with one well now producing from Glenn sand with a guarantee of an additional well to Glenn sand and, if production not encountered in paying quantities in Glenn sand to test the Wilcox sand and, if production encountered in paying quantities in either sand to equip well to connect with tanks or pipe line.

Each unit will represent a one-sixtieth interest in lease, with the one well now producing in the Glenn sand and an additional well to the Glenn sand fully equipped, or if production not secured in paying quantities in the Glenn sand to drill to the Wilcox and if production encountered there in paying quantities, to equip well to be connected with tanks or pipe line. Only 30 units will be offered—price $500 per unit.

May consider from responsible parties the exchange of these 30 units for a completed and equipped test to the Wilcox sand.

Address communications and requests for further information and copy of Glenn and Wilcox structure map to Box B-814, The Oil and Gas Journal, Tulsa, Okla.

OHIO AND OWSLEY COUNTIES are now getting the big play in Kentucky; leases around drilling wells; drilling blocks in Kentucky and Indiana turnkey drilling contracts. All kinds oil field service. References. P. C. Matthews, 304 Fayette Bank Bldg., Lexington, Ky.

WANTED—Agent or broker to place some shares in new high grade oil company in your city on commission. E. A. Peek, El Rio Sales Company, 16 Smith Bldg., Amarillo, Tex.

640 ACRES, Wheeler County, gas well mile southwest, gas wells 3 miles northeast, well drilling 5 miles east, location made 5 miles northeast. Tank farm and pipe line building between this land, which is 5 miles west of town McLean, now a supply center. The 640 acres is on crest of structure. Offers 40, 60, 80 or 160 up, $30 per acre for land, including mineral rights subject prior sale. Wire your order to F. P. Simpson, 517 Worth Building, Fort Worth, Tex.

24,320-ACRE LEASE FOR 10 YEARS
10c RENTAL, WEST TEXAS
Located on line Schleicher and Sutton Counties in trend of production southwest of Brown, Coleman and Concho Counties. All in one lease, one ownership, no drilling obligations, land free of incumbrances. Major companies own large blocks same counties. Will sell one-half or all at $1 acre and give reasonable terms. Owner of lease, L. W. Stieren, 815 Alamo Bank Bldg., San Antonio, Tex.

STRUCK OIL!
Have some good bargains in farms and ranches in fee. Good leases in blocks from 4 to 12,000 acres each. Also good royalty. Offer 1,040 acres in Twp 29n, R. 35e, New Mexico, 10-year lease and one-half royalty $2 per acre. Write or wire H. H. Errett, Clayton, N. Mex.

LOVING COUNTY TEXAS. Will sell lease and fee or lease only on all or part hundred and sixty acres close to flowing oil well. Write Geo. Young, Suite 515, Hartford. Bldg., Chicago, Ill.

OHIO COUNTY, KENTUCKY
Acreage for sale, close to producers and drilling wells. Best play in Kentucky.
G. Taylor Yewell, Owensboro, Ky.

ARKANSAS and Mississippi leases and royalties near drilling wells. Any size tracts. Get my prices. Maps free. Drilling blocks handled. W. A. Feild, 905 W. 13th St., Little Rock, Ark.

LEASES—PRODUCTION

215 ACRES, Sec. 7-6n-2w, McClain County, Oklahoma. New 10-year lease; abstract furnished; $4 acre. Fee owner, Box 1, Oklahoma City, Okla.

I HAVE 3,200 acres oil leases, Lynn County, Texas, will give driller 6/8. Russell Smith, Fairfield, Iowa.

$5.00 An acre.

"Can You Beat It!"

GREENWOOD COUNTY, KANSAS.
Several producing wells ¾ to 1 mile South. Must sell. Price tells the story. 80 acre oil lease. Runs until April 1932. Rental paid up to April 1928. S ½ N. E. ¼, Sec. 9, Twp. 24, R. 13. J. E. Greeley, 341 St. Peter St., St. Paul, Minn.

C. W. REYNOLDS Realty Co., Stratford, Tex., has several attractive leases for sale. Also some fine land in Sherman County, Texas.

LEASES, drilling blocks, royalties, West Texas for sale. W. W. Hines, Box 1303, Abilene, Tex.

HUNDRED barrels settled, shallow, Oklahoma production. Large acreage, sure locations. Box 1629, Tulsa, Okla.

BREWSTER COUNTY, TEXAS, land in fee; unleased; $2 per acre. Woldrige, 211 W. 10th, Oklahoma City, Okla.

BLOCKS taken for bonafide operators in Miami and Franklin County. Production for sale. Clarence H. Chambers, Osawatomie, Kansas.

FOR SALE or lease, NW ¼ of Section 10, Township 9n, Range 79w, Jackson County, Colorado. Clear title and United States patent. 1½ miles west of the Continental Oil Co. well.
H. S. EVERTS, Owner
731 W. Broadway, San Diego, Calif.

IF YOU WANT TO BUY
Oil leases, royalties, acreage in fee, or a drilling contract, anywhere in the Big Bend district of Texas, write or wire.
JOHN CHRISTIE & CO.
Investment Brokers
Alpine, Tex.

I HAVE several hundred acres of oil and gas leases in McCurtain County, Oklahoma, running for 5 years, $1 per acre. P. T. Calahan, Idabel, Okla.

INCORPORATIONS

CHARTERS — Deleware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

PATENT ATTORNEYS

PATENTS—Oil well cases a specialty. Reliable services by an experienced practitioner devoting personal attention to each case. References to oil well clients in Tulsa. B. P. Fishburne, Patent Lawyer, 550 McGill Bldg., Washington, D. C.

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Lacey & Lacey, 718 F St., Washington, D. C. Established 1869.

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
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Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

FOR SALE—MAPS

COLOMBIA, SOUTH AMERICA, OIL MAP
Prepared by J. Jimenez Jaramillo, Ex-Chief of the Bureau of Mines at Bogota. Size 54"x91"—Blue line print on white cloth. Shows properties owned by various companies, pipe lines, known anticlines, etc. Price $100.00 post paid U. S. A. or Canada. J. Jimenez Jaramillo, 1059 S. Alvarado St. Los Angeles, Calif.

ADDITIONAL CLASSIFIED WANTS ON PAGE 145

Chicago Refined Market Unchanged

Indications at Beginning of This Week Were for Same Conditions as Prevailed Past Seven Days

By J. B. Waldo

CHICAGO, Apr. 18.—There was nothing in conditions in the spot market today that indicated any marked change during the current week. The very large number of cars out on Easter Sunday showed a large gasoline consumption and caused refiners to believe that dealers would soon be more active buyers. The actual buying of gasoline today was along the recent line, small orders and not easy to get. Many jobbers in response to inquiries stated they were not buying now and only in a few cases was any reason given. A few are still waiting for a change in the tank wagon but the majority simply have enough gasoline for the present. The prices for U. S. Motor was very generally 6½ cents and this price was shaded in few instances. Reports of lower prices were current but it was hard to find any seller at a lower price for a doctor test sweet gasoline and in some cases the stated price is asked for gasoline that will not meet all specifications.

Kerosene was moving fairly well and some sales between refiners were indications to many that the supply was not large and that prices should improve but so much wet weather is holding back the tractor demand in many sections. There was no change in the fuel oil market either as to demand or selling prices. One offer of a 22-26 oil at 90 cents was made but it was high in sulphur, over 3 per cent. Gas oil was also practically unchanged. Some offers to buy at less than recently-offered prices were declined. The present market suggests a continuance of last week's conditions for the first part of this week at least.

Little Change Last Week

There was very little change in conditions here or in prices last week. The market was dull with both buyers and sellers waiting for some change to start a movement one way or another. Sellers are waiting and expecting a renewal of the buying movement while buyers are holding off until they are either forced to replenish their stocks or are assured that there will be no further declines in crude or refined oil prices nor any readjustment of the tank wagon scale in this territory. The feeling among the dealers is that the gasoline market is at the bottom unless there is a further weakening in underlying conditions such as a decline in Mid-Continent crude or a serious accumulation of stocks of gasoline that might result in another selling campaign similar to that of some three weeks ago when many of the larger jobbers and marketers were given an opportunity to place orders at what was then below the regular market price. The result of that selling campaign was to force down prices and hold them down to a level that has been unchanged since the first of the month.

There was only a very moderate amount of buying done at the A. O. M. A. convention last week. Some orders were placed and several agreements for contracts made but the results were not important from the sellers' standpoint. One of the most active of the marketing organizations reported substantial sales made but said that they had to work hard for every car and that the orders individually were for small totals, a car or two for this station and the other, no large quantities.

Increase in Gallonage

Reports made by large and small distributors including several of the major companies are that their gallonage is far ahead of last year. One large organization reported a 50 per cent increase for the first 10 days of April over last year but in this case the company has increased the number of its outlets in this territory and has also changed the grade of the gasoline distributed at its own stations to a better quality so that some of this increase has been made by subtraction from the business of its competitors. Other companies state that their gallonage for the first week or 10 days of this month was from 20 to 30 per cent higher in most cases from practically the same number of stations. It should be remembered that last April was a very bad month from the motorists' viewpoint. Early in the month there were very heavy snows all over this territory so that while the gain is real as compared with last year, there is no reason to reckon on a continuance of the same percentage of increase over last year when we come to comparisons with months of 1926 when the weather was more nearly normal.

The gasoline price situation was practically unchanged during the entire week, the quotations on all gravities and end points showed little tendency to move either towards higher or lower levels. Comparison of quotations of April 15 with April 1 indicated a decline during the first half of the month in this market of exactly one-quarter of a cent on all grades of gasoline according to averages of quotations made by leading sellers to the trade. One factor in this condition has been the large quantity of gasoline of the U. S. Motor grade which had been sold to dealers and also to marketers at 6 cents or a little more or less. The dealers who were supplied with this gasoline did not need to buy and many of them will not purchase during the entire month unless they are convinced that there is a stronger market pending. The marketers who had this gasoline due them for April delivery found but a narrow market from which to seek business and they, through competing with each other and with refiners who quoted direct, held the price at the figure at which they could move the product and make a little profit. There is little doubt that the supply of gasoline is ample for likely requirements, the question that will very largely determine the coming price is the extent of the demand and the ability of the market to absorb supplies as fast as they are available.

U. S. Motor in Demand

The demand was very largely for the U. S. Motor grade. The price of this is so low that there is no demand now at least, for the 56-58-450 and very little for the 56-58-437. There is a considerable movement in the 60-62-437 or as they call it 400-navy. This product is sought by dealers in Wisconsin where the gravity is determined by law but not the endpoint and also by some distributors who believe that it is a better gasoline and enables them to compete with the stations where a 60-62-400 endpoint is regularly sold at the normal station price. The antiknock or as some prefer to call them supergasolines continue in good demand, sales to capacity of the plant being claimed by some refiners. Of course this is a part of the plan of the larger distributors of these supergasolines to increase their gallonage by offering a better quality of merchandise to the consumer and so long as the present spread continues between the cost at the refinery and the selling price to the consumer the dealer can well afford to offer his customers something better even if it does cost him a little more than the straight U. S. Motor grade.

There is little demand for the higher gravities as they have been supplanted to a great extent by the supergasolines. The amount of export buying reported here is small, most of it being secured by eastern companies going directly to exporters of California gasoline.

Kerosene Weaker

Kerosene weakened towards the close of last week not that the demand was not as good but the offerings by refiners who had overrun their requirements depressed prices. Generally the market was quoted at 4¼ to 4½ cents but several sales were made at as low as 4⅛ cents by refiners selling direct to dealers. Jobbers are asking for a 4-cent price. There is some improvement in the consumption according to the reports of distributors and there may be a better demand around the first part of May at which time the use of the tractors may be at its height. Usually after the first half of May there is a very marked decline in the demand for kerosene.

The distillate demand is practically through so far as any quantity of business is to be reckoned. There are a great number of distillate contracts that have not been filled and which will never be completed. Dealers contracted for and did not take out large quantities. Some of them doubtless over-bought being misled into the belief that refiners would not deliver the full quantity ordered. There was so much talk of a scarcity of distillates that jobbers were alarmed. The decrease in the demand was met by an increase in the output of the refineries and the result is a bad mess to unscramble. Several refiners who broadcast the statement that they would crack all their distillate came on the market with large supplies. Instead of the predicted price of from 7½ to 9 cents we have had a peak of 5½ cents here and few had to pay that peak price. The greatest trouble with furnace distillate is that it is a by-product and today no distributor really knows anything about the quality, price or amount of his next fall's distillate supply. He does not even know if he will need anything better than a zero, straw gas oil and many dealers do not care now as to color. They are educating their customers to the fact that color is immaterial in a good furnace fuel.

Gas Oil Sluggish

The gas oil market is sluggish right now and prices are gradually sinking but there is a point where there will come a volume of buying that may change conditions. Several of the larger users of gas oil have stated that they would fill their tanks when they could do so at not over 2½ cents a gallon. They want a low flash, low cold test cracked oil, color immaterial, for distribution to owners of domestic oil burners. The utility companies are less willing to name the price at which they will begin buying. They, like so many of the buyers of the heavier oils, are waiting for a crude decline in the Mid-Continent Field. They may be disappointed, and if crude does not decline then there may be a higher rather than a lower market for gas oils. Today there is, owing to this prospective demand from the distributors of gas oil for domestic fuel, a tendency to hold for a slight premium on the cracked gas oil especially if the color is light. It is improbable that much buying for storage will take place for a couple of months

(Continued on Page 154)

EASTERN TANK WAGON MARKET LOWER WITH CONSUMPTION MAKING RECORD

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 16—A general reduction in the tank wagon gasoline market in New York and New England of 1 cent a gallon to 19 cents was the feature of the refined oil markets during the past week. The tank wagon market is still 3 cents higher than in New Jersey, and as the differential is usually 1 cent, further cuts in the New York territory are expected shortly.

There was no indication of improvement in the gasoline situation during the week, despite record consumption. Refiners were willing to sell all the U. S. Motor gasoline they could in tank cars at 9 cents a gallon, and reports were current that as low as 8¾ cents had been accepted.

Motorists in New York City and vicinity are paying 22 cents a gallon for gasoline. Although it can be had at certain stations for less, the number of these stations is small, probably not handling more than 1 per cent of the total business. While price cutting in the retail gasoline trade is doubtless rampant in some sections of the East, the above facts are advanced to show that the market is not especially weak in all parts.

The interests benefiting largely by the low prices are the trucking and bus companies able to purchase gasoline in tank car lots at refineries, paying the freight themselves. All the gasoline they want can be had for 9 cents a gallon at the present time. This probably represents 25 per cent of the consumption of gasoline on the Atlantic Coast, and is a considerable factor in the situation.

As a result of the situation outlined, there appears to be a double-faced market for gasoline on the Atlantic Coast. One is that represented by tank car sales to large consumers, usually operating commercial vehicles, the sales representing U. S. Motor gasoline. The other market consists in the branded gasoline sold to garages and service stations, and this gasoline nets a higher price to refiners than the U. S. Motor.

Kerosene More Firm

The kerosene market is somewhat more firm due to improved export sales and domestic demand. Prices are generally unchanged.

Gas and Fuel Oil

The gas oil market is fairly steady, although some sales have been reported below 6 cents a gallon.

The price of fuel oil continues unchanged. The demand is increasing steadily, but it is a question whether prices will hold, in view of recent reductions in crude prices. Weakness in gasoline is expected to be reflected ultimately in the fuel oil market as a result of the curtailment of cracking operations.

Just what the outlook in Mexico is no one here seems to know definitely, but heavy crude output in that country seems to be holding up and exports also. California fuel oil seems also to be plentiful, and the heavy supply of heavy Venezuelan crude is increasing. In view of this it is considered questionable if fuel oil prices will remain at present levels.

Lubricating Oils

The market for lubricating oils is firm,

(Continued on Page 145)

Problems of Motor Car Lubrication

Follies and Mysteries of Lubricating Discussed. Troubles Rightly or Wrongly Attributed to Oil

By R. B. White*
Valvoline Oil Co., Chicago

For several years the salesmen of several thousand oil companies have been preaching the gospel of good lubrication; fortunes have been spent in advertising in various ways the folly of poor oil; motor car manufacturers without exception have told and retold through their service departments and dealers the story of lubrication's vital effect on the life and performance of their machines. Everything is being done to drive home the true significance of lubrication, and to a considerable extent these efforts are succeeding.

Crankcases are drained more regularly. Lubrication is much better understood and respected. A greater demand has been created for better oils. Much progress has been made by engine builders toward scientific oiling systems. Yet too much is expected of the motorist; too much is still expected of the oil and oil refiners. I shall speak not of the need or importance of good lubrication, but of the follies of lubrication. I shall try to explain some of the mysteries of lubrication, the troubles of motoring or fleet operation attributed both rightly and wrongly to the oil.

Contamination and Bearing Failure

Bearing failure, piston seizure and worse (such as connecting rods sailed through the crankcase walls) are serious complaints attributed in far too many cases entirely to the oil. When a bearing burns, the oil is at fault regardless of the fact motor car bearings seldom burn if oil is actually supplied to the bearings. Failure of bearings is generally due to oil contamination, to foreign material found in greater or lesser quantities in all crankcases and consisting of:

1. Dilution — unburned or partly burned gasoline in the oil, of which I shall speak in detail later.

2. Moisture—Which as a product of combustion enters the crankcase with the unburned fuel.

3. Road Dust—sand, etc., entering through the breathers, dirty oil fill pipes or the carburetor intake and thence into the carburetor with dilution.

4. Metallic Particles—worn from the walls, the journals and the bearings, plus metallic oxides, impurities or scale from the gas tank, core sand from new castings, etc.

5. Carbon—formed in the combustion chamber and washed into the case by dilution; also formed by burning of the oil on the inside of the piston and by "cracking" or polymerization of the oil in circulation.

6. Petroleum Acids—formed by the deteriorating effect on the oil of all other five factors. Its nature is not exactly understood, but it is the fore runner of sludge and forms in all oil good, bad and indifferent, when enough impurities are present.

Now all these impurities are constantly accumulating in the crankcase—in some engines faster than others, under certain conditions faster than others—there to remain in that haven of other enemies of good lubrication until the kind-hearted motorist sees fit to drain his oil.

Oil Filters

Listen to users of oil filters and one is led to believe that items 3, 4 and 5 are all important; listen to other users of the rectifier and one is led to believe items 1 and 2 are the insidious cause of all motor ailments. In my opinoin, one group is no worse than the other and jointly partner in crime responsible for wear, inefficiency, noise and lost power. In other words, if we stop dilution—by rectifiers or other means—we can have much more dust without getting into trouble; and on the other hand if we keep out dirt entirely—by air cleaners or filters—we can stand considerably more dilution.

Here someone may raise an objection—why, if dust causes wear, partly if not entirely, didn't we have excessive wear years ago before the boom for good roads when dust was a fright wherever we went, when everyone wore linen dusters and goggles, when carburetors to have gravity feed were placed low near the roadbed and consequently sucked in gobs of dust? Or, if dust is the curse of wear, why change the oil more frequently in winter when there is little or no dust? Or, "in the good old days," oil was rarely changed, why worry about dust today?

My answer is that gasoline of 70/72 gravity and 300 endpoint, with which dilution was exceedingly small, is ancient history. Bad as dust used to be, much of it was consumed in the combustion process or at least prevented from abrasive action by undiluted oil of good body. Oil drained from the crankcase was not infrequently heavier than when it was put in. All was not as rosy in those good old days as some would have us believe. Bearing trouble was common, so was carbon; engines never accumulated annual mileages common to thousands of motorists today; the man who drove 200 miles in one day was eligible for the old "200 club" of Chicago, which at no time had a membership exceeding 150. Engines wore out from contamination just as fast or faster than they do today.

Almost all engineers agree that if it were possible to maintain a film of oil on the cylinder walls and bearings so that bearings pressures would be exerted on a cushion of oil rather than gritty particles, wear would be materially reduced. In the study of wear and contamination, the microscope and camera have been very helpful. Microphotography shows that dust particles in the oil rarely exceed one-thousandth of an inch in diameter. Dust in the intake air is frequently much larger, showing that piston ring action has pulverized them on their way to the crankcase. Most dust in the oil is so small as to be scarcely discernible even when highly magnified. Wear evidently must take place only after the film of oil has been thinned by unburned fuel, so its thickness is no greater than the dirt in suspension.

Analyses of the Oil

How much of this dust and foreign material do you suppose exists in the average crankcase? The 1925 and 1926 survey by the Society of Automotive Engineers, in which hundreds of samples were taken in various parts of the country for analyses by the Bureau of Standards, shows solid material in suspension averaging 0.484 per cent—nearly a half of 1 per cent. This consisted of asphaltenes, .064 per cent; carbon, 0.264 per cent; ash, 0.147 per cent. The carbon percentage not only represents carbon from the oil but organic dust, lint and fibers; the ash represents road dust, sulphur, iron and other metals.

Just as the doctor reads the symptoms of various organic disorders from certain ingredients in the blood, in like manner can we read symptoms of mechanical disorder from analyses of the oil in circulation. Such analyses must be very accurate, but they can tell an interesting story. For example: From several hundred crankcase drainings, the history of which was carefully recorded, we have shown graphically that the more road dust found in the used oil the more the iron oxide or cylinder wear. We have also shown that when the dilution of the oil increases, the amount of iron oxide rises in proportion.

What is to be done about contamination? Oil screens cannot be expected to remove anything but the coarsest of material, such as lint or carbon chips from the piston head. Coarse material ordinarily does not give us much concern, as it separates out of its weight unless, of course, the pump sucks from the very bottom of the oil sump. The Purolator or the A-C or similar filters are quite effective, however, in removing foreign material, and in doing so they undoubtedly promote better performance and longer life. In proof of that statement here are the facts from the unbiased S. A. E. surveys. Of 41 vehicles equipped with oil filters and air cleaners, studied in 1926, the ash in the used oil averaged 0.069 per cent, while in 386 vehicles not so equipped the ash averaged 0.145 per cent. In 1925 almost identically the same percentages were discovered. Note that the average ash is approximately half as much when filters are used as when not. While the filter is not perfect, it certainly does help to keep the engine clean, to minimize wear and tear.

Foreign Material

Whether this foreign material acts abrasively or not, there can be no doubt that (1) it is a first-class emulsifying agent and (2) it separates out in time by gravity and by centrifugal force. When it does, it frequently collects in the drilled holes that supply oil to the main bearings, the holes or tubes that supply the rod bearings or the camshaft bearings. However small we know these particles to be, they can accumulate when centrifuged out of the oil by the revolving shaft to clog the lines and cause disaster, particularly when the oil flow is not rapid enough to cause a scouring or cleansing action, which is the case with large diameter oil lines. Many a bearing failure has been so caused, and often the cause will not be easily determined later for the reason that the offending dirt accumulation had been loosened by the pounding of the bearing and washed out by the renewed flow of oil.

Following is an analysis of used oil that produced just such a complaint from an Omaha fleet operator.

Gravity, 32.0° A. P. I.
Flash point, 217° Fahrenheit.
Fire test, 231°.
Pour test, 25°.
Viscosity (S. U.) at 100°, 248".
Dilution (Sligh method), 7 per cent.
Insolubles in petroleum ether, 1.55 per cent.

Upon careful analysis of the insolubles in the used oil and of the slime in the crankshaft oil lines that had stopped the flow of oil to the bearings, it was learned that they contained about 51 per cent of carbon, iron 11 per cent, silica 17 per cent, and oxidized oil 18 per cent. This oil had been in service about 22 days, some 850 miles in a White truck in short haul to and from an excavation over very dusty roads. The owner pointed out that the oil still had good body (which it did), that there was plenty of it in circulation, that the pump was working, that there was a good driver at the wheel. Yet a bearing burned. The trouble was caused by gradual accumulation of extremely fine carbon and dust in oil lines and sump despite fairly regular oil drainage; the fact the lines has not been thoroughly washed out when the bearings were previously adjusted; and the absence of an air cleaner for the very dusty operating conditions. The finest oil ever made would eventually burn a bearing under these circumstances.

Dilution

If then dirt and carbon can be filtered out, what is to be done about dilution? First, let us consider what dilution really is. As to its ultimate cause, no disagreement exists. We know that liquid gasoline gets into the oil and converts a viscous oil of good lubricating value into a thin mixture unable to protect the surfaces from friction and wear. To realize how the viscosity (at 100 degrees) of an oil is cut down, consider these published figures on a widely advertised, medium heavy motor oil at various temperatures:

	Viscosity			
Dilution	0°	70°	100°	210°
0	270,000	2,100	585	57
15	20,000	560	200	44
25	8,000	280	117	..

And how much dilution do you suppose we find in the average car? Of 360 vehicles scientifically studied last year, all cars that were not equipped with rectifiers the average dilution at the usual draining period was 15.7 per cent. One car had 44 per cent, 9 cars showed 6 per cent, and none had less. The average moisture in the used oil was 1.54 per cent. In 1925 a survey showed an average dilution in 223 vehicles of 14.3 per cent, average moisture 0.6 per cent.

Without entering into a length technical discussion, research has shown that crankcase dilution under average conditions depends on:

(1) Average temperature of the cylinder walls.

(2) Volatility of the fuel and the dewpoint of the fuel-air mixture.

(3) The gasoline-air ratio.

Probably keeping the water jackets hot is the most effective means of reducing dilution; in fact, anything that produces more thorough vaporization reduces the number of liquid particles that strike the oil film on the walls, and hence dilution. Present day engines require too long to warm up, and it is during this warming up period that most dilution is formed.

Use of Rectifiers

In one rectifier diluted oil that tends to work up past the pistons, and water vapor and unburned fuel that finds its way along the cylinder walls to the crankcase are sucked from the cylinder walls and rings by means of the intake vacuum. The rectifier is really a small still heated by the exhaust, and into this still the diluted oil is conducted and heated. The vapor that comes off is returned to the intake manifold and so is burned, contributing to the power and efficiency of the engine. The residuum flows into a receiver and thence back to the crankcase. In another rectifier, the flow of oil through the still is controlled by a float actuated mechanism and a thermostatically controlled valve regulates the amount of heat to which the oil is subjected, the whole system functioning automatically.

As to results, the users of the rectifier make many strong claims. Of 50 samples of oil from cars using the rectifier, it is said none showed more than 12 per cent dilution and none less than 1 per cent. Of 71 cars and trucks that were equipped with rectifiers the average dilution was found to be 13.1 per cent. Four of the 71 rectifiers could not have been working at all, for dilution in those cases amounted to 34 per cent; six cars exceeded 16 per cent. Even if these 10 cases are extreme, the remaining 61 averaged 10.5 per cent dilution. As compared with the figures given for cars without rectifiers—15.7 per cent—the showing for the rectifier is certainly nothing to brag about. It has its disadvantages, too; it is rather complicated; the holes drilled in the piston fill up with carbon, carbon tends to form in the still, the temperature of the oil leaving the still is around 500 degrees, which is high and tends to oxidize the oil, and there is some danger of sucking too much oil off the walls at times. It is, nevertheless, a step in the right direction, which in time should be greatly perfected. To its credit, let me say that it does eliminate moisture from the used oil. Three times as much moisture was found in the crankcases of cars equipped without rectifiers as in cars with them. Moisture in the case

*Before A. O. M. A. Convention, Chicago.

causes no little winter-time grief, and in connection with poor gasoline moisture is the cause of almost all corrosion complaints. Its elimination by the rectifier is a good talking point.

Other methods have been devised of late to minimize crankcase dilution. The system of crankcase ventilation—passing the air that enters the carburetor first through the crankcase—is a simple and very effective scheme. Unburned fuel in the crankcase is swept out before it is absorbed by the oil. This ventilation is accomplished at the expense of oil consumption, but that is a small matter compared with the troubles that dilution creates. The supercharger as now used in racing and on some foreign cars is a preventive of dilution. With this device gasoline can be so perfectly carbureted that combustion is greatly improved and as a result there is very little dilution save during the warming-up period. Thermostats to govern jacket water temperature above the dewpoint of the fuel-air mixture are helpful. Steam cooling which has been produced recently has good possibilities.

Moisture, Corrosion and Sludge

At one time or another every oil marketer has heard the complaint, "The oil has become a livery mass," or "The oil has thickened up and burned a bearing," or "The oil must have had water in it; I found a pint in my crankcase," or "The oil contains acid; the wrist pins of my car have been etched and scored," etc. Under certain conditions of service the oil that will not thicken up, that will form liver, that will not indirectly produce corrosion cannot be made. It is true of all oils but naturally much more so of oils made to a price rather than a standard of quality.

I have already explained that water is formed in all crankcase oils. Water is a product of the combustion of gasoline and some water vapor is bound to enter the case as blowby and to condense. To realize that water vapor is a large part of exhaust gas, remember that the water condensers on the ill-fated Shenandoah actually had saved more water from her exhaust at the end of the flight than the tanks held gasoline when she took off. Water forms in another way. The air in the crankcase of a cold engine is quickly heated by the hot piston heads, and this air condenses out its moisture on the cold walls and the cold oil. Moisture is bound to accumulate, we have found, as long as the temperature of the cylinder jackets is less than 110 degrees Fahrenheit. There may not be much in the summer; what forms during the starting and warming-up period will soon be expelled through the breathers. But it's a different story in the winter, starting an engine at 10 degrees above the period of condensation depending on engine size and the design of the cooling system. Meantime, rain continues to fall in the case. This water seldom collects in large quantities; it appears rather in droplets the size of a pin head which take considerable time to collect. These droplets will freeze and thus the lower half of the crankcase may frequently be found coated with oily ice from the oil level to the top of the pan. Sooner or later this ice melts and thus the water finds its way into the oil. I need say nothing of what takes place when said droplets freeze in the oil and gather in a solid mass around the pump screen—regardless of the cold test of the oil.

Cold Engines

This brings us to consideration of lubrication when a cold engine is being started. The first effect of this moisture, especially if good quantities of raw gasoline are present from liberal use of the choke, is to destroy the oil film remaining on the walls after the engine was stopped. Thus water comes in contact with the bare walls unless fresh oil is supplied immediately upon starting the engine. And is it? Not in engines with pressure oiling systems! Jardine, of the Aluminum Co. of America, has shown that from 10 to 15 minutes may elapse while pressure systems are quite inoperative. At best, pressure systems are very sluggish in cold weather. This is not true of the old-fashioned splash system. However cold, the oil will be thrown onto the walls and thus rusting and scoring will be prevented. Rust, in fact, will cover the walls in an extraordinarily short time; indeed, cases have been reported where the walls were completely covered in half an hour. And this rust is a beautiful abrasive once the engine is started again. I believe that a large part of engine wear can be attributed directly to piston scuffing and scoring from nothing other than moisture on the walls in winter driving.

Now consider water's partner in crime—acid. Water is bad enough, but water and acid or ingredients that produce acid are worse. Gasoline that has been properly refined—able to pass both doctor and corrosion tests—contains a negligible quantity of sulphur. Unfortunately not all gasoline is so made, but gasoline is not the only source of sulphur. This is also true of benzol fuels which have been carelessly or improperly refined. In diagnosing corrosion or sludge complaints the character of the fuel should be carefully scrutinized, but fuel is not the only source of sulphur or acids. A few lubricating oils contain sulphur which chemical treatment has failed to remove completely from the crude, especially cheap California or Texan oils. In the past it was not uncommon to find oils on the market from which the sulphuric acid had not been thoroughly washed out, but to the credit of our western friends that is exceedingly rare today.

Trouble With Sulphur

The trouble with sulphur is that it burns to form sulphur dioxide which added to water makes sulphurous acid. It is believed that this acid is converted into sulphuric acid. Whether it is or not, sulphur and water are responsible for etched piston pins, cylinders and timing chains. Manifestly a reduction of sulphur content of either fuel or lubricant is highly desirable. Water, as I have said before, is harmful enough, but water plus acid is an evil of present lubricating systems — the correction of which is not entirely clear.

As to solid matter, sludge, thickened oil, etc. add to motor oil not only water but foreign material already described in sufficient quantities and a fine concoction is formed for rapid circulation under pressure to the bearings and cylinders! Little is known of the petroleum chemistry of what takes place under these circumstances. It is known that the oil oxidizes, that the demulsibility of the oil is destroyed, that some cracking takes place with the net result a miserably slimy sludge and a supernatant liquid thinned down to the consistency of fuel oil. This unfortunate condition will result, mind you, with any oil if sufficient impurities are present in badly-diluted motor oil, however good it may have been. Needless to say, the better the oil the less the tendency to sludge.

Causes for Sludge

There are other causes for sludge, first of which is poorly compounded oil, the use of stocks from which the wax has not been properly removed, or petroleum stock cut back with fuel oil. Leaking water jackets or spongy castings will produce a brick-red slimy crankcase sludge. Shellac or glue from gaskets has been known to cause this trouble the same as cup grease squeezed from the ignition head or the water pump and drained into the crankcase. The latter causes are rare. Sludge caused by extreme dilution, dirt and moisture is easily the most common cause of these unfortunate and generally little-understood complaints. Let me add here that sludge trouble in the motor car can become chronic unless the crankcase is thoroughly washed out once it has formed there.

A vigorous complaint that our products were sludging badly after short service was recently reported by an operator of 125 trucks in Chicago. Badly etched wrist pins, corroded timing chains and in one case burned bearings (from sludge in the oil lines) had developed within a few hours after two of the trucks had been overhauled. Analysis of the crankcase oil showed a strong acid reaction even though the fresh oil was as usual chemically neutral and had good demulsibility. Analysis of the gasoline showed a surprisingly high sulphur content despite the fact it showed a negative corrosion test. Ordinarily 18 to 20 degrees Mid-Continent fuel oil should not exceed 0.5 per cent sulphur; U. S. Motor specifications for gasoline call for maximum sulphur of 0.1 per cent. Yet the gasoline used by this fleet ran 0.55 per cent sulphur content—good water white gas, too, with a decent distillation curve and not an especially objectionable odor. The same old story of extreme dilution from choking the carburetor and rich mixtures to get the newly-overhauled engines broken in, moisture as well as fuel in the case. formation of acids, etching, corrosion and sludge.

The argument that fortunes can be saved by raising the sulphur limit in motor gasoline is, in my opinion, the bunk. The world's total investment in automotive machinery consuming gasoline has been estimated at $25.000.000,000. How much of a saving, I wonder, would justify a change that would bring unnecessarily rapid deterioration or inefficient operation of such a huge investment in motor equipment?

Carbon Deposits

I come now to the last phase of automotive lubrication — carbon deposits — a subject that is better understood than the preceding but concerning which there exist many incorrect popular beliefs. I believe we are all quite familiar with the general effects of carbon—overheating, loss of efficiency, loss of power (especially in hill climbing when power is most needed), detonation or "pinging," etc To avoid detonation using ordinary gas the designer must keep low the compression ratio as compared with aviation practice and the motorist must retard his spark which means increased fuel consumption and loss of pep once carbon forms. Carbon brings about intensified valve spitting, valve sticking, irregular motor action. It is to the gasoline engine as scale is to the boiler—a heat insulator, an enemy of power and flexibility and economy.

It is obviously necessary that some oil work its way up beyond the piston rings; if the rings serve as a perfect barrier to oil the consequences are obvious—abrasion, scoring, piston seizure. On the other hand, if the rings allow too much oil to pass by, more oil than the fuel flame can burn up cleanly, we have what is known as "oil pumping" and carbon. The problem of design is to effect a satisfactory compromise between flooding and starving the cylinder walls. Such is the problem of the engine builder. What oil gets by should burn clean. That is the problem of the oil refiner. The margin between underlubrication and overlubrication is quite narrow, but it is possible to strike a proper balance and there is where the driver of the car comes in—either carelessly or ignorantly to disturb this balance and to bring grief to oil men and engine builder alike. By disturbing this balance, I mean.

1. Too rich a mixture, not enough air to burn up oil in the combustion chamber, and which also causes dilution.
2. Unnecessarily heavy oil—sometimes used to bolster up oil pressure or to replace metal worn away.
3. Too high an oil level in splash lubricated engines.
4. Low compression caused by worn rings, leaking valves, poor tappet adjustment.
5. Shims or bearings improperly fitted to the crankpin or badly worn, allowing excessive bleeding which means that streams of oil are projected into the cylinder bore when oily vapor is all that is needed.
6. Poor oil—incompletely dewaxed, poorly treated or blended, made from cheap stock and nonviscous neutral oil.

SPECIFICATIONS FOR HEATING OIL SUGGESTED BY OIL DISTRIBUTORS

By L. A. Stewart*
Vice President, Atlas Petroleum Co., Chicago

There is a considerable difference of opinion regarding the need for standardization of specifications on domestic heating oil. It is rather difficult to convince the average refiner that this is as important as the jobbers claim it to be. This is caused primarily by the fact that most refiners are unable to standardize, or at least guarantee over any period of time uniform specifications on heating oils.

It must be remembered that in addition to having different processes for refining this oil, the various refiners operate on different crudes from different fields with altogether different specifications. Furthermore, it may be economical for a refiner to run on Seminole crude today, whereas six months from today this crude may not be available to him, and he would be forced to operate on crude of entirely different specifications. Unfortunately for the jobbers that are specializing in furnace oils, the refiners run their plants for the manufacture of gasoline, lubricating oils, etc., rather than gas oil. In other words, furnace oil is a by-product.

There was considerable agitation on this subject last year and an effort was made at that time to get the refiners to standardize on specifications submitted by the Chicago Oil Men's Club. If I am not misinformed, the efforts met with but little success, due, primarily, I think, to the reasons mentioned above.

Refiners' Viewpoint

From the refiners' viewpoint, it is necessary for the oil burner manufacturers to produce a burner that will use practically any oil down to 28 gravity and with a flash point of around 200. A great deal has been accomplished in the way of improving burners for industrial plants and it is my prediction that within a very few years oil burners will be made for use in homes and apartments that will operate efficiently on the oil that we are now shipping almost exclusively to industrial plants.

From the jobbers' viewpoint, it seems most important that something be done this year to insure their getting not only from one but from many refiners uniform products of gravity lighter than 32 and in most instances a flash of under 170. Two other items of importance are cold test and odor. The odor, of course, has nothing to do with the actual value of the oil, but people refuse to burn oil that leaves an objectionable odor in the house.

Without a doubt the jobbers could set up certain specifications that they will require and at least a few refiners would be able to meet these specifications and would be willing to contract for them over the winter season. I am inclined to the belief, however, that should this be done, the refiners conforming to these specifications could and would get a premium for their products.

There is another feature that enters into the specifications situation that some of us do not care to admit, but the facts are that the demand for heating oils or certain grades of heating oils depends largely on what products are being sold by the larger companies. In other words, if Standard, Sinclair, Roxana, Texas and other large companies put out a very fine grade of 38/40 standard white, 160 flash oil, the independent jobber is going to have to meet this competition and I doubt if anyone knows today, possibly the large companies do not know themselves, what kind of oil they are going to sell next

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*Before American Oil Men's Association convention, Chicago, April 14.

containing sulpho compounds or unstable hydrocarbons.

7. Poor gasoline and chokitis; in fact, anything that causes crankcase dilution.

8. Dusty intake air which is a most prolific cause of carbon.

Constituents of Carbon

Now just what does this carbon consist of? For the most part, if you will pardon a lapse into the technical, carbons consists of highly condensed hydrocarbons of a bituminous nature mixed or combined with mineral matter containing many different elements. Most of it is like coke in which there is 15 per cent of oil more or less decomposed. Some is quite acidic containing naphthenic or asphaltogenic acids. The mineral matter varies from 5 to 25 per cent depending on the conditions of service and consists of silicates, chlorides, sodium sulphate and iron oxide with sometimes a trace of sulphur. It is interesting stuff which few solvents will touch excepting such carbon removers as cymidine or xylene or monochlorobenzene.

The reason heavy oils produce greater carbon is in the opinion of many oil men because "they contain hydrocarbons of greater carbon content." I don't believe that is true. Heptane found in gasoline contains 1.2 per cent less carbon than pentacosane found in heaviest lub oils, a solid melting at 128 degrees. In Gulf Coastal oils, light or extra heavy, the percentage of carbon is exactly the same. The cause, in my opinion, is the breaking down or partial breaking down of the larger more unwieldy molecules by heat, but just how this reaction takes place is not known.

SPECIFICATIONS FOR HEATING OIL SUGGESTED

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winter. If, on the other hand, the larger companies put out an oil of say 32/36 gravity with a 200 flash, the independent jobber will have considerably less difficulty in getting his share of the business. I mention this because it must be remembered at all times that our end of the oil industry is so greatly influenced, if not completely controlled, as far as prices and products are concerned, by the producing end of the industry. If crude is plentiful and cheap the jobbers can get almost anything they want; if it is scarce and high in price the jobbers simply have to take what they can get and try to convince the public that they are doing the best they can.

Jobbers' Point of View

My personal belief is that it would be impossible at this time to adopt specifications that would be satisfactory to any large number of refiners. I doubt if conditions could have been any worse than they were last winter, from the jobbers' viewpoint. With the idea in mind of at least improving conditions, it would be my suggestion that a representative group of jobbers arrange specifications that would be most suitable to the majority, take steps, either individually or collectively, to notify the refiners of their requirements, either through the association or individually and find out as soon as possible just what refiners are willing to co-operate and are able, under existing refining conditions, to meet these specifications. At the end of each year other arrangements or specifications could be agreed upon. In other words, if the jobbers could adopt standard specifications on a certain number of different grades of burning oils, it would at least be a step in the right direction and I believe if nothing could be accomplished collectively the industrial jobbers would get much farther than they are getting today with the regular sources of supply. I also believe it would be an incentive for the carload marketers to get a number of the smaller refiners to make oils of these specifications for their regular trade.

I have before me specifications that were submitted to the Western Petroleum Refiners' Association last winter by the Burning Oil Distributors' Club of Chicago. Those who wrote the specifications on the material desired, represent a consumption of about 150,000,000 gallons a year. This is approximately 18,750 cars, or close to 1,600 cars a month coming into this territory alone. In my opinion, a great deal of time and thought was put into the formulating of these specifications by the Chicago oil men and the specifications that they have recommended are very practical and show that the men who formulated them are thoroughly familiar with both the refining and the jobbing ends of the industry.

Burning Oil Distributors' Club of Chicago specifications recommended to Western Petroleum Refiners' Association for burning oils:

18-20 Fuel Oil

Color, black.
Odor, sweet*.
Gravity, minimum 18.
Flash, maximum 225.
Fire, maximum 250.
Cold test, 0-10.
Viscosity at 100, maximum 125.
End point, any.
Sulphur, not over 1 per cent.
B. S. & W., not over 1 per cent.

28-30 Fuel Oil

Color, black.
Odor, sweet*.
Gravity, minimum 28.
Flash, maximum 200.
Fire, maximum 225.
Cold test, 0-10.
Viscosity at 100, 75.
End point, any.
Sulphur, not over one-half of 1 per cent.
B. S. & W., not over one-half of 1 per cent.

32-36 Straw Gas Oil

Color, 3 to 3½.
Odor, sweet*.
Gravity, minimum 32.
Flash, maximum 185.
Fire, maximum 200.
Cold test, 0.
Viscosity at 100, 45.
End point, 650.
Sulphur, one-half of 1 per cent.
B. S. & W, none.

24/26 Fuel Oil

Color, black.
Odor, sweet*.
Gravity, minimum 24.
Flash, maximum 225.
Fire, maximum 250.
Cold test, 0-10.
Viscosity at 100, maximum 115.
End point, any.
Sulphur, not over 1 per cent.
B. S. & W., not over 1 per cent.

32-34 Dark Gas Oil

Color, dark.
Odor, sweet*.
Gravity, minimum 32.
Flash, maximum 200.
Fire, maximum 225.
Cold test, 0.
Viscosity at 100, maximum 50.
End point, 650.
Sulphur, not over one-half of 1 per cent.
B. S. & W., none.

37-40 Straw Gas Oil

Color, 2 to 2½.
Odor, sweet*.
Gravity, minimum 37.
Flash, maximum 175.
Fire, maximum 190.
Cold test, 0.
Viscosity at 100, maximum 40.
Endpoint, maximum 600.
Sulphur, none.
B. S & W., none.

*This does not mean "doctor test."

I have learned indirectly that the Western Petroleum Refiners' Association prefers to have this matter handled by or through committee D-2 of the American Petroleum Institute. However, superficial investigation on my part develops that the American Petroleum Institute is not at this time willing to make any specific recommendations, but is working constantly with the National Association of Oil Burner Manufacturers and will probably have some definite recommendations to make in the near future. It seems the institute has put a great deal of work on this. But what information I have on the subject is not for publication. I must, therefore, refrain from giving you more specific information from that source, but believe that any committee appointed to formulate specifications should communicate with Dr. R. P. Anderson of the American Petroleum Institute.

EASTERN TANK WAGON MARKET IS LOWER

(Continued from Page 142)

with prices unchanged. The demand for light oils is increasing at a gratifying rate. Industrial demand for lubricants is sliding off somewhat.

Paraffin Wax

The paraffin wax market is unchanged. Export demand is improving considerably, and it may be that prices are now on the bottom.

Petrolatum

The petrolatum market is unchanged. Very little improvement has been noted, with the possible exception of dark green.

The Export Market

The New York export market is showing considerable improvement, especially with regard to case and barrel shipments. During the past week there was a considerable increase in exports of kerosene in cases, the feature of which was a consignment of nearly 150,000 cases to China.

Paraffin wax shipments during the week were also large, exceeding 3,000,000 pounds, of which 2,516,140 pounds moved in bags and 807,975 pounds in barrels. The big improvement in wax exports is attributed to large takings in the Far East, and in South America.

Petrolatum asphalt shipments during the past week were also very large. One cargo carried over 20,000 bbls., and the total export for the week amounted to 6,391 tons.

Another important consignment was of 6,000 tons of petroleum coke to France.

Petroleum Exports

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted:)

	Week Ended—		
Gasoline—	Apr. 13	Apr. 6	Mar. 30
Bulk	.....	3,335,346	.....
Cases	2,562,990	732,990	105,000
Kerosene—			
Bulk	235,004	.....	.....
Cases	3,723,280	710,450	221,500
Lubricating oil—			
Bulk	2,396,830	.....	.....
Barrels	1,124,500	560,450	36,250
Cases	89,830	336,280	183,070
Lubricating grease—			
Bbls. (lbs.)	206,100	995,400	256,500
Paraffin wax—			
Bags (lbs.)	2,516,140	1,476,640	917,840
Bbls. (lbs.)	807,975	.....	.....
Petrolatum asphalt—			
Bbls. (tons)	6,391	.....	3,798
Petroleum coke—			
Bags (tons)	6,278	.....	.....

The foregoing figures include shipments of 500 bbls., 1,000 cases or over.

Oil Tanker Market

The market for oil tankers was comparatively dull, with rates unchanged. Fixtures were at approximately the same levels as have held for the past two weeks, and indicated no new trend. Interesting fixtures included one from Cartagena, Colombia, to Trieste, Italy; and another from Trinidad to the British Isles.

Oil Receipts Large

Receipts of crude and refined oils at Atlantic Coast ports for the week ended April 13 aggregated 4,083,000 bbls., a daily average of 584,000 bbls. This compares with 4,365,000 bbls., or 624,000 bbls. daily, for the week ended April 6.

Receipts from the Gulf Coast totaled 2,756,000 bbls., a daily average of 394,000 bbls. a day, this comparing with 2,984,000 bbls, or 426,000 bbls. a day, the week ended April 6.

Receipts of California oil totaled 524,000 bbls. for the week ended April 13, of which 346,000 bbls. went to New York. In the preceding week, total receipts at all ports were 225,000 bbls.

Imports totaled 803,000 bbls., a daily average of 115,000 bbls. Of these, a daily average of 60,000 came from Mexico, and 55,000 from South America.

Petroleum Receipts

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended—		
	Apr. 13	Apr. 6	Mar. 30
Gulf Coast	394,000	426,000	287,000
Pacific Coast	75,000	32,000	71,000
Mexico	60,000	70,000	39,000
South America	55,000	96,000	92,000
Total	584,000	624,000	489,000

Daily Averages by Months

1927—	Gulf	Pacific	Mex.	S. Am.	Total
March	345,000	103,000	36,000	81,000	565,000
Feb.	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926—					
Dec.	363,000	57,000	49,000	61,000	530,000
Nov.	335,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	299,000	98,000	63,000	58,000	518,000
Aug.	326,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000
April	326,000	92,000	126,000	20,000	564,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

SOUTHWEST TEXAS

(Continued from Page 54)

ritory, is drilling at 500 feet and if it makes a producer will prove up quite a length of territory.

Kingsville Field—Kleberg County

Carter-Walsh's No. 1 Flato, Lot 29, King land, 300 feet to center of west lines, is drilling at 1,100 feet, with slight showing of gas and oil at 785 feet. Humble Oil & Refining Co.'s No. 3 Kleberg Trustee, Lot 1, Section 40, located 150 feet to NW cor., bailed salt water, with slight show of oil and gas at 2,621 feet and is now drilling at 2,670 feet; No. 1 Kleberg Trustee, Lot 8, Section 40, located 150 feet to NE cor., is in hard gray sand at 2,750 feet; No. 3 King, east of Cayo Del Grullo, 500 feet north of No. 2 King, is drilling at 1,200 feet; No. 3-A Dennett, 150 feet to NW cor. of Lot 2, Section 39, is drilling at 850 feet; No. 1 Kivlin, NW cor. of Lot 5, Section 39, is drilling at 1,780 feet and expects to set 10-inch casing at 2,000 feet. A. C. Erwin's No. 1 Kivlin (fee) Lot 7, Section 50, located 660 feet to SE cor., is shut down at 710 feet.

Refugio Gas Field—Refugio County

Houston Oil Co.'s No. 10 J. J. Heard, Refugio Survey, 592 feet northeast of No. 9, made location. Houston Gulf Gas Co.'s No. 3 Holmes Heard is at 2,100 feet and ready to test; No. 3 Fox, Lot 4, Block 5, Town tracts, has set casing at 2,110 feet; No. 3 Moody, Refugio town tracts, is drilling. William F. Morgan's No. 3 Rose Rogers, northeast of No. 1, Powers Survey, has made location; No. 1 Lambert has set surface casing.

Classified Wants

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Old Press, 215 East Third St., Tulsa, Okla.

CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

FOR SALE—DOGS

FOR SALE — Beautiful grown male and female Boston Terriers. Female Pekingese, 4 months. All Pedigreed, reasonably priced. Honor Bright Kennels, Deerfield, Ill.

FOR SALE — Llewellyn and English setters also rabbit hounds on trial, phamphlets free. O. K. Kennels Marydel, Md.

TOO LATE TO CLASSIFY

TRUCKS—3 ton, new F. W. D. $1,500 in Indiana. Box 653, Kansas City, Mo.

SEND for free prospectus of new producing oil company already owning 4 oil wells and proven locations for 60 more wells. Small company. Only a small issue stock for sale. Richborne Oil Co., 14 Massa Ave., Mansfield, Ohio.

REFINING AND MARKETING

Price War Continues In Gasoline Market On the Pacific Coast

By L. P. Stockman

LOS ANGELES, Calif., Apr. 17.—When the Pan American company cut gasoline 2 cents a gallon in Los Angeles territory on March 22 the other major marketers sat tight for more than a week and did not meet the reduction until March 31 at which time crude oil prices were also slashed. During the interim Pan American sales, because of the 2-cent advantage, jumped tremendously, several stations showing gains of 200 and 300 per cent. This additional business was lost, of course, by other marketers who did not meet competitive prices. The Pan American company sliced off another 2 cents in Los Angeles territory effective at noon Friday, April 15. In order to prevent a duplication of conditions which resulted from the delay in meeting the Pan American's first cut of March 22, Standard Oil met the latest cut of Pan American within a few hours and other marketing companies fell in line shortly afterward.

The retail service station price in Los Angeles city is now 12½ cents per gallon including state tax of 2 cents, quotations in the surrounding area being slightly higher due to tank wagon haul. This represents a drop of 6 cents per gallon during the past 30 days, the first reduction of 2 cents being posted by California Petroleum Corp. on March 18.

California gasoline can now compete on a little better than an even basis with the Mid-Continent product provided adequate tankers are available as a considerable quantity of California motor fuel is now available for intercoastal trade at 5 and 6 cents per gallon.

The Richfield Oil Co., in meeting the latest cut of Pan American, came out in the open and announced the existence of a general price war on the Pacific Coast due to frenzied attempts to build up gallonage by all companies and, with this justification, announced a statewide reduction of 2 cents per gallon, in gasoline. Motor fuel is now selling at 15 cents in San Francisco including usual state tax of 2 cents, present quotations in that district representing a reduction of 4 cents within the past 30 days. The situation in the Pacific Northwest is also weak due to extension of price cutting in several districts throughout Washington and Oregon. The Pan American announcement setting forth its last cut of April 15, which is restricted to southern California because of limited distribution, contained what might be termed a threat of further reductions because of the statement that other companies had automatically cut again when they met Pan American's first reduction of March 22. It is generally rumored that Pan American will chop off another 2 cents in Los Angeles territory early next week but I do not anticipate any such drastic action notwithstanding that Pan American has exceptionally large storage of gasoline and is producing about 10,000 bbls. of crude oil daily in Seal Beach town lot area with the possibility of substantially increasing pipe line runs due to additional completions in the near future.

If Pan American cuts again in Los Angeles territory other major companies can either follow immediately or sit tight temporarily in the hope that conditions will improve soon. Everyone appreciates that it is extremely disastrous to keep on cutting and conditions must be stabilized in order to avert enormous losses, particularly if the price war is extended all along the Pacific Coast. For this reason some early concessions by all marketers are anticipated since the summer season will afford a little relief as a result of increased sales.

NOT GUILTY

CHICAGO, Apr. 16.—A jury at Vincennes, Ind., has decided that a resident of that county who drove his car into Illinois and secured a fill of gasoline and drove his car back into Indiana without paying any tax on the gasoline is not guilty of any violation of the law.

KANSAS OIL MEN TO MEET

The annual convention of the Kansas Oil Men's Association will be held at Wichita May 12 and 13, according to an announcement by John A. Motter, secretary of the association. The program for the two-day meeting will be announced in the near future. A. C. Carpenter, of Ottawa, is president of the association.

Domestic Consumption Of Gasoline Greater In Month of February

Daily domestic consumption in February averaged 5.7 per cent more than in January and 7.7 per cent more than in February of last year. These figures were based on data compiled by the American Petroleum Institute from 36 states having gasoline tax reports. Gasoline consumption in the 36 states for February, 1927, as indicated by reports made by wholesalers and dealers in the various states under provisions of the gasoline tax laws as 14,206,000 gallons, compared with a daily average of 13,436,000 gallons in January, 1927.

The figures giving the quantity of gasoline sold or offered for sale, as reported under the various laws, gasoline inspection laws totaled 397,781,000 gallons, compared with 369,440,000 gallons in February, 1926, an increase of 28,341,000 gallons. Daily average consumption for February, 1927, was as follows: In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which if paid, is subsequently refunded. All figures are subject to revision.

Gasoline Consumption by States, February, 1927

	Month of Jan., 1927 Gallons	Month of Feb., 1927 Gallons
Alabama	*10,662,000	9,347,000
Arizona	2,626,000	2,595,000
Arkansas	7,156,000	6,493,000
Colorado	8,157,000	7,482,000
Delaware	1,179,000	1,589,000
Florida	†24,175,000	22,814,000
Georgia	16,370,000	12,486,000
Idaho	1,764,000	1,944,000
Indiana	22,576,000	19,394,000
Iowa	16,847,000	15,249,000
Kansas	16,619,000	16,075,000
Kentucky	6,095,000	5,735,000
Louisiana	11,606,000	10,608,000
Maine	*1,617,000	1,646,000
Michigan	34,180,000	32,243,000
Minnesota	12,148,000	14,627,000
Mississippi	8,336,000	7,499,000
Missouri	22,177,000	17,545,000
Nebraska	10,869,000	10,386,000
Nevada	618,000	659,000
New Hampshire	1,446,000	1,331,000
New Mexico	2,013,000	1,585,000
North Carolina	16,291,000	14,441,000
North Dakota	2,276,000	4,254,000
Ohio	41,350,000	42,816,000
Oklahoma	16,455,000	16,445,000
Oregon	‡6,564,000	6,973,000
Rhode Island	3,329,000	2,949,000
South Carolina	6,551,000	6,379,000
South Dakota	5,135,000	4,572,000
Texas	41,961,000	38,413,000
Utah	2,622,000	2,023,000
Virginia	9,252,000	9,504,000
Washington	11,205,000	12,178,000
Wisconsin	12,887,000	13,820,000
Wyoming	1,394,000	1,282,000
Total	416,508,000	397,781,000
Daily average	13,436,000	14,206,000
Increase over previous year:		
Amount		28,341,00¢
Percentage		7.7%

*Revised. †All Florida figures are inspection figures account tax figures not available. ‡All Oregon figures include gasoline distillate not heretofore reported.

Garrett in Charge Western Operations Of Tidal Companies

A. F. Garrett of Tulsa has been placed in charge of the western operations of the Tidal Refining Co., Tidal Pipe Line Co., Tidal Western Refining Co. and the Tidal Chelsa Refining Co., according to an announcement Saturday at the Tulsa headquarters of the Tidal companies.

The appointment of Mr. Garrett follows the recent resignation of L. F. Bayer, vice president and general manager of four of the Tidal companies. Mr. Bayer resigned to accept the position of vice president in charge of manufacturing operations of the Associated Oil Co. with headquarters in San Francisco, Calif. The Associated and Tidal companies are subsidiary organizations of the Tide Water Associated Oil Co.

A. F. Garrett

Mr. Garrett is widely known in Mid-Continent and Central West refining and marketing circles. He joined the Tidal organizations seven years ago as sales manager. Previously he had been engaged in the marketing of petroleum products, having at one time been sales manager of the Roxana Petroleum Corp. About a year ago he was made a vice president of the Tidal refining organizations and also assistant general manager. Mr. Garrett's work in the past has largely been confined to the handling of sales and he has a wide acquaintanceship among the jobbing trade throughout the Middle West. The companies of whose operations he is now in charge operate refineries at Drumright, Okla., and Burkburnett, Tex., with a number of natural gasoline plants in Kansas, Oklahoma and Texas.

Several other changes were announced in the personnel companies. C. R. Barton, who is chief engineer of the four Tidal companies previously named, will have charge of all manufacturing operations. R. N. Cline, who has been assistant sales manager of the companies for several years, has been made sales manager. O. S. Ambrose will be assistant to Mr. Garrett.

KANSAS ROADS ASKING HIGHER CRUDE RATES

Kansas railroads are asking for an increase in the crude oil rate from 14 cents to 16 cents, and an increase in the refined oil rate from 17½ cents to 20 cents from all Kansas refining points to Atchison, Leavenworth and Kansas City. The application to the Public Service Commission states that the changes asked are in agreement with the recent increases allowed by the Interstate Commerce Commission.

The Santa Fe Railroad, in a separate application, proposes to decrease the rate on crude oil from 14½ cents to 17½ cents from Hot Springs to Argentine and also asks that the rates on casinghead gasoline be reduced approximately 3 cents between several points in Kansas.

Western Petroleum Refiners Association Committees Selected

The Western Petroleum Refiners Association has completed its committee appointments for 1927 and the complete roster of these committees was announced during the past week. W. P. Z. German, of the Skelly Oil Co., was made chairman of the legal committee. Other committee chairmen are: Technical, C. L. Henderson, Vickers Petroleum Co.; traffic, F. A. Pielsticker, Skelly Oil Co.; finance, Roy B. Jones, Panhandle Refining Co.; membership, L. R. Crawford, vice president, Producers & Refiners Corp.; credits, R. R. Irwin, vice president, White Eagle Oil & Refining Co.

In addition to the chairmen the following are members of the committees:

Legal—J. C. Denton, Mid-Continent Petroleum Corp.; W. C. Franklin, Tidal Oil Co.

Technical—F. B. Koontz, Mid-Continent Petroleum Corp.; H. W. Camp, Empire Refineries, Inc.; Walter Miller, Marland Refining Co.; Dr. F. W. L. Tydeman, Roxana Petroleum Corp.; W. E. Moody, Shaffer Oil & Refining Co.; F. E. Holsten, Barnsdall Refineries, Inc.; L. F. Bayer, Tidal Refining Co.; W. F. Sims, Panhandle Refining Co.; J. A. Sartori, Producers & Refiners Corp.; J. W. Wadsworth, Independent Oil & Refining Co.; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.; Mr. Frevert, Lubrite Refining Co.; C. R. McKay, Pierce Petroleum Corp.; R. J. Black, Sinclair Refining Co.; A. J. Slagter, Transcontinental Oil Co.; C. K. Francis, Skelly Oil Co.

Traffic—H. W. Roe, Mid-Continent Petroleum Corp.; A. C. Holmes, Empire Refineries, Inc.; H. C. Mulroy, Marland Refining Co.; W. M. Powers, Lubrite Refining Co.; A. F. Winn, Skelly Oil Co.; B. J. Burchett, Shaffer Oil & Refining Co.; L. B. Lea, Pierce Petroleum Corp.; J. M. O'Day, Sinclair Refining Co.; Henry Hausman, Pure Oil Co.; E. W. Seiboldt, Roxana Petroleum Corp.

Finance—George D. Locke, Barnsdall Refineries, Inc.; C. L. Henderson, Vickers Petroleum Co.

Membership—E. W. Goebel, Manhattan Oil Co.; J. L. Gray, Shaffer Oil & Refining Co.; E. H. Eddleman, Continental Oil Co. of Texas; A. E. Landsittel, Globe Oil & Refining Co.; Walter K. Campbell, Western Oil Corp.

Credits—Emery Burnett, Continental Oil Co.; H. G. McLean, Empire Refineries, Inc.; W. Z. Brown, Producers & Refiners Corp.; M. D. Creel, Marland Refining Co.; G. A. Burns, Roxana Petroleum Corp.; J. M. Judson, Sinclair Refining Co.; Fred Barman, Pure Oil Co.; M. W. Bottomfield, Transcontinental Oil Co.; F. T. Hopp, Skelly Oil Co.; H. M. Edinger, Barnsdall Refineries, Inc.; Charles Klein, Mid-Continent Petroleum Corp.; M. A. Chambers, Panhandle Refining Co.; A. J. Ahlum, Crystal Oil Refining Co.

Oil Securities Irregular During Week

Union Tank Car, Chesebrough and Prairie at New Highs. Marland and Phillips Weak. Shell Union Bond Issue

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 18.—Oil securities were irregular during the past week. Union Tank Car, Chesebrough Manufacturing, Prairie Pipe Line and Vacuum Oil rose to new high prices for all time under steady accumulation. Marland and Phillips were weak. Lee Higginson & Co., bankers, are offering $50,000,000 20-year 5 per cent sinking fund gold debentures of Shell Union Oil Corp. at 99½ and interest yielding about 5.04 per cent.

Some Oils Strong

The oil stocks have given an exhibition of irregularity since the price cuts in March. While some issues have been weak, new high prices for all time have been recorded in some parts of the list, indicating to some that the present oil situation affects different oil companies in a different manner.

Vacuum Oil Co. stock was one of the strong features, advancing to a new high above 114. Union Tank Car was another strong stock, reaching a new high for all time of 112½. This is credited to heavy inland rail traffic in crude and refined oils, caused by shortage of pipe line facilities to some of the new fields, necessitating rail movement of crude, and big inland consumption of refined oil products.

White Eagle Oil

White Eagle Oil & Refining Co. has given an option to Dillon, Read & Co. to purchase 50,000 shares of no par value common stock at any time up to and including December 31, 1929; at $30 a share if purchased on or before December 31, 1927; at $32 per share up to December 31, 1928, and $34 a share on or before December 31, 1929. Stock subscription warrants covering 50,000 shares additional, attached to 10-year 5½ per cent sinking fund debentures outstanding in the amount of $5,000,000 dated March 15, 1927, entitle holders to subscribe on or before March 15, 1932, for 10 shares of capital stock for each $1,000 bond at $32 a share up to March 15, 1928; at $34 up to March 15, 1929, at $36 up to March 15, 1930; at $38 up to March 15, 1931, and at $40 a share up to March 15, 1932.

Oil Well Supply

The Oil Well Supply Co. will retire on June 1, next, at par and accrued interest, its $1,875,000 first mortgage 6 per cent bonds. This will leave the company without funded debt. The offering of rights to common stockholders to purchase new common stock at $32 a share to the extent of one share for each eight held will yield $1,300,000 of the funds necessary for the retirement. The remaining $575,000 will be supplied from working capital.

The Oil Well Supply Investment Co., which holds 130,000 shares of Oil Well Supply common, has not made known whether it intends to exercise its rights or to sell them. To purchase the 16,250 shares of new common to which the Investment company is entitled would require $520,000. So far as can be learned no new financing is being planned by the investment company. Rights expire April 28. An option on 34,000 additional shares owned by J. H Hillman, Jr., also is held. These would carry rights to purchase 4,250 additional shares at a cost of $136,000.

The Investment company has $400,000 of 5½ per cent 5-year notes and $2,400,000 preferred 7 per cent stock authorized and unissued which may be used to acquire additional stock of the Oil Well Supply Co. The additional notes may be issued not in excess of 40 per cent of the value of new securities pledged.

The retirement of the bonds will leave the preferred stock as the only class of securities senior to the common. During 1926, $140,000 of the original issue of $7,000,000 was retired. Further reduction of the preferred stock will take place through operations of two sinking funds. The first provides that $140,000 shall be set aside each year from surplus or earnings for redemption. The second fund provides that 25 per cent of net earnings of the previous year be set aside on June 1 of each year, beginning with 1926, after preferred dividends and the first sinking fund have been deducted. Net income of $2,045,227 for 1926 indicates about $496,257 will be available for the retirement of the preferred under the combined funds. The preferred is callable at 110. The second fund ceases to be cumulative after $1,300,000 has been set aside.

Further reduction of the preferred stock may also be brought about through the use of conversion privileges, which may become valuable in the future. The preferred is convertible into common on the basis of par for preferred and $40 for the common stock until $2,000,000 has been converted. After this, the common is on a basis of $45 for the next $2,000,000 and $50 for the remaining preferred.

Plymouth Oil Co.

In his report to stockholders for 1926, Walter S. Hallanan, president of Plymouth Oil Co., transmitting report of subsidiary Big Lake Oil Co., says crude oil production by Big Lake was 7,148,987 bbls. This brought total production since November 15, 1923, to 12,812,016 bbls., production being maintained to keep it on an average basis of contracts for 20,000 bbls. daily.

Status of Big Lake Oil Co.'s crude oil contract is unchanged, thus far, 20,000 bbls. daily being handled by Reagan County Purchasing Co. of which 10,000 bbls. daily goes direct to that company and 10,000 daily is delivered by them to Humble Oil & Refining Co. Latter contract expires May 15, 1927 and it has not been decided whether this 10,000-bbl. contract with Humble will be renewed or the oil disposed of on outside contracts.

In the past 18 months Plymouth Oil Co. has acquired jointly with Transcontinental Oil Co., 1,826 acres on Goleta structure, near Santa Barbara, Calif. Adjoining this a discovery well producing 300 bbls. daily has been completed.

Plymouth acquired last year 1,920 acres in Pecos County, Texas, and, together with Transcontinental Oil Co., 2,560 acres in Crockett County, Texas.

Plymouth Oil Co. reports for year ended December 31, 1926, net profit of $8,925,281 after depreciation, depletion and Federal taxes.

Vacuum Oil Co.

The following is the statement of the Vacuum Oil Co. as of December 31, 1926:

Assets

Real estate, plant and equipment (less depreciation)	$ 22,042,989.57
Stocks of foreign Vacual oil companies	20,629,871.52
Other investments	816,649.70
Merchandise and material	36,178,536.52
Accts. receivable—	
From foreign Vacuum oil companies	29,095,993.72
From others	10,245,682.33
	$ 39,341,676.05
Cash and securities	21,858,105.04
Deferred charges	652,238.00
	$141,520,066.47

Liabilities

Capital stock	$ 62,470,800.00
Accounts payable:	
Due foreign Vacuum oil companies	554,374.43
Due others	5,182,493.21
	$ 5,736,867.64
Insurance reserve	2,500,000.00
Income tax reserve	2,112,514.80
Surplus	68,699,884.03
	$141,520,066.47

After deducting from the profits for the year's operations, $2,506,381.78 for inventory depreciation in addition to the usual plant depreciation and $596,000 premium paid to retire our bonds, the net profits amount to $25,263,655.31 for the year 1926.

The 15-year 7 per cent bonds of the company issued April 1, 1921, of which there remained outstanding $14,900,000 on January 1, 1926, were retired during the year at a premium of 4 per cent. The company now has no bonded indebtedness.

Dividends to the amount of $12,478,583 were paid during the year; the balance of earnings, amounting to $12,785,072.31 being carried to surplus.

Maracaibo Oil Exploration

The consolidated balance sheet of the Maracaibo Oil Exploration Corp. and subsidiaries as of December 31, 1926, compares with 1925 as follows:

Assets

	1926	1925
†Property, plant, equip.	$2,610,375	$2,544,436
Cash	1,148,107	1,164,631
Accounts receivable	5,135	6,867
Materials and Supplies		34,917
Deferred assets	398,719	369,249
Total	$4,162,336	$4,120,100

Liabilities

Cap. stock & surplus	*$4,162,336	*$4,119,492
Accounts payable		608
Total	$4,162,336	$4,120,100

†After depreciation. *Represented by 330,000 no par shares.

Pan American Petroleum

The report of the Pan American Petroleum & Transport Co., including owned and controlled companies, for the year ended December 31, 1926, shows net profit after interest, depreciation, depletion, Federal taxes, etc., of $31,280,007, including $2,060,616 representing the company's proportion of the net profit of Lago Oil & Transport Corp. for the 11 months ended November 30, 1926. This

(Continued on Page 156)

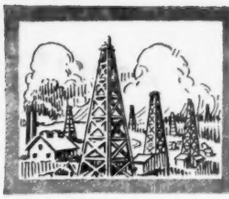
NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Apr.18	Clos. Quot. Apr.11	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	28⅞	30⅛	37⅝	30⅜	32⅞	24¾	..	..
Atlantic Ref., com.	100	112	109½	117⅜	107	128⅜	97	117½	95½
Barnsdall "A"	25	28	28½	35½	27	32½	23½	33½	18¾
California Pet., com.	25	24⅜	26⅛	32¾	24⅜	38⅛	30⅞	34⅜	23⅜
Houston Oil	100	106⅞	105	124¾	60½	75	50¼	85	59
Independent Oil & Gas	..	21⅜	22½	32¾	23½	34	20¼	41¾	13½
Louisiana Oil	10	13	13½	18½	13½	19⅝	12	23¾	13⅜
Maracaibo	..	*15	*16	22¾	16¼	27⅜	18⅝	35½	20⅜
Marland	..	41½	46¾	58¼	41	63⅝	49¼	60⅛	32⅝
Mid-Continent Pet.	..	31¼	32⅝	39⅝	33⅞	41	25⅝	38	25⅝
National Supply	50	86½	90½	95¾	82½	84⅞	55½	71	54⅜
Oil Well Supply	25	34½	34	40⅜	31¼	36	30	38	33⅜
Pan. Amer., B	50	57⅜	58⅝	65⅞	57½	72⅜	56⅛	83⅞	51½
Pan. Amer., Western B	..	20⅜	21½	37⅞	26⅞	46	34	94⅝	37¼
Phillips Pet.	..	44¼	46⅝	60¼	43⅞	54⅞	42½	47⅛	36½
Producers & Refiners	50	24⅞	23½	32	16¾	26	11	32⅝	12½
Pure Oil, com.	..	27½	28¼	32⅝	27¼	31	25⅝	33⅜	25½
Royal Dutch, N. Y., sh.	13.40	49¼	49¼	54½	50	57⅝	49⅝	57⅜	48¼
Shell Transport	10	*43	44¼	49	44½	48⅞	42	49	39⅝
Shell Union Oil, com.	..	27	27⅞	31¾	26⅞	30⅝	24	28⅜	21⅝
Simms Pet.	10	17⅜	18⅛	22¾	18⅜	28⅝	16½	28½	17¾
Sinclair Consolidated	..	17⅛	17⅝	22½	17⅝	24⅞	16⅜	24⅞	17
Skelly Oil	25	27¾	29⅝	37⅝	30¼	37⅛	27	32½	21⅜
Standard of California	25	54	55⅝	60⅜	55½	63½	54	67¼	52½
Standard of New Jersey, com.	25	36¼	36⅝	41⅜	36	46⅝	37½	47½	38⅝
Standard of New York	25	31	31⅜	34½	31	47¼	30⅝	48⅝	40
Sun Oil Co.	..	33	33⅜	34⅞	30	41⅝	30⅛	43⅞	38½
The Texas Company	25	43⅜	47¼	58	43⅜	58	48	55	42⅜
Texas Pacific Coal & Oil	10	13⅛	14	16⅜	13	19½	12¼	23⅜	11
Tide Water Oil	25	*24	*24	29½	27	39¼	27	..	..
Transcontinental	..	4	4	5	4⅛	5½	3	5⅝	3½
Union Oil of California	25	40⅝	43⅝	56½	39⅝	58⅜	37¼	43⅜	33⅛
Union Tank, com.	100	108	103	112½	95	120⅜	84¼	‡134	118
White Eagle O. & R.	..	24	24¼	27½	25⅛	29⅜	25⅛	21⅜	25⅝
Standard Oils									
Anglo-Amer. Oil	£1	18⅜	*19	21⅝	18⅜	19¾	16½	26⅜	17⅛
Borne Scrymser	25	*51	*51	69	53¼	75	65	‡240	205
Buckeye Pipe Line	50	49½	49¾	48½	45	59½	47⅝	72	63½
Chesebrough Mfg. Co.	25	86	*81½	86	76½	81¼	63	74	48¼
Continental	10	18⅝	18⅞	22⅝	18⅝	25⅞	19¼	31½	21⅞
Cumberland Pipe Line	100	95	94	137	106	137	102	156	128
Eureka Pipe Line	100	*51½	*51½	51¼	47	53¾	43	96	61¼
Galena Signal, com.	100	11	*10	13½	10¼	32½	9⅞	68½	23½
Humble O. & R. Co.	25	59	57⅜	62¾	54	99⅝	52	99	42½
Illinois Pipe Line	100	139	138½	141	123¾	144	131	154½	124
Imperial Oil	..	42⅛	44¼	46	37¾	39¾	32½	39¼	27¼
Ind. Pipe Line	50	67	*66½	69½	61	68	52¼	84	87½
International Pet. Co.	10	30⅞	31½	34⅜	30½	35¼	28⅜	25⅝	22⅝
National Transit Co.	12.50	14⅜	*14	14	13⅝	20⅜	27¼	25½	16⅛
New York Transit	100	*32½	32	36	31¼	51½	27¼	79	50
Northern Pipe Line	100	*75½	*75½	79¼	70	80½	64	88	67½
Ohio Oil Co.	25	*56¾	*57	64¼	57½	67¾	55⅝	75¼	60
Penn-Mex Fuel	25	*12	15	19	16½	24¼	15	44	19
Prairie Oil & Gas	25	47	48½	55½	48¼	60¼	48	65½	45⅞
Prairie Pipe Line	100	154½	*147	151	132	137½	122½	129¾	105
Solar Refining Co.	100	182	*183	201½	185	212	184½	259	200
So. Penn Oil	25	36¼	*36¾	41½	35½	50	35	‡157	139
S. W. Pa. Line	100	64	*62	62½	53½	56	47½	84	50
Southern Pipe Line	50	*18	*18	27¼	15½	27	24	‡103	63
Standard of Indiana	25	66	65⅞	74¾	66½	101½	61⅝	70¾	69½
Standard of Kansas	25	17½	17⅝	20⅞	15⅝	36½	16⅛	46	30¼
Standard of Kentucky	25	113¾	114½	122¾	114¾	134⅜	108	137	114⅜
Standard of Nebraska	25	47¼	47½	49½	46⅜	51⅛	42	‡270	231
Standard of Ohio, com.	100	85	76½	264	335	362	192½	369	338
Swan & Finch, com.	25	*16	*16	16	15	21	18	27	12
Vacuum Oil	25	115	108¼	116½	95⅛	109¾	94⅛	109½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	87¾	90	96½	92¼	95	82½	98⅛	63½
Tidewater Associated	..	17⅛	17⅜	23⅛	17⅛	17	21	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Apr. 18	57.42	Mar. 14	59.26	Feb. 7	60.51
Apr. 11	57.37	Mar. 7	59.34	Jan. 31	60.09
Apr. 4	56.62	Feb. 26	60.83	Jan. 24	59.89
Mar. 28	58.51	Feb. 21	60.26	Jan. 17	60.38
Mar. 21	58.03	Feb. 14	61.13	Jan. 10	59.42



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Apr. 19		Apr. 12		Apr. 5	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06	.06¼	.06¼	.06½
56-58 450 end point	.06	.06¼	.06	.06¼	.06¼	.06½
58 60 450 end point	.06	.06¼	.06	.06¼	.06¼	.06½
56-60 450 end point	.06	.06¼	.06	.06¼	.06¼	.06½
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06½	.06¾
60-62 400 end point	.06¾		.06¾	.07	.07	.07¼
64-66 375 end point	.07		.07	.07¼	.07¼	.07½
68-70 360 end point	.07½	.07¾	.07½	.07¾	.07¾	.08
64-66 437 end point (blend)	.06	.06¼	.06	.06¼	.06¼	.06½
KANSAS—						
58-60 437 end point (U. S. Motor)	.06½	.06¾	.06½	.06¾	.06¾	.07
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.06		.06		.06	.06¼
56 58 450 end point	.06	.06¼	.06	.06¼	.06¼	.06½
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06¼	.06¼	.06¾
60-62 400 end point	.06½	.06¾	.06¾		.06¾	.07
64 66 390 end point	.06¾	.07	.06⅞	.07⅛	.07	.07¼
64-66 375 end point	.07		.07		.07¼	
68-70 360 end point	.07¼	.07½	.07¼	.07½	.07⅝	.07¾
64-66 437 end point (blend)	.06	.06¼	.06	.06¼	.06¼	.06½
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06½	.06¾
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06½	.06¾	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.09	.09¼	.09½	.09¾	.09½	.09¾
54-56 Naphtha	.09	.09¼	.09½	.09¾	.09½	.09¾
58 60 Gasoline	.08¾	.09	.09	.09¼	.09	.09¼
60 Gasoline	.09¼	.09¾	.09¾	.10	.09¾	.10
62 Gasoline	.09¾	.10	.10	.10¼	.10	.10¼
64 Gasoline	.10	.10¼	.10¼	.10½	.10¼	.10½
CALIFORNIA—						
58-60 437 end point (U. S. Motor) domestic	.05½	.06	.06	.06½	.07	.08
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06¼	.06½	.06¼	.06½
56 58 450 end point	.06	.06¼	.06¼		.06¼	.06½
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06½	.06¾
60-62 400 end point	.06¾	.07	.06¾	.07	.07	.07¼
64-66 375 end point	.07	.07¼	.07¼	.07½	.07½	
68-70 360 end point	.07¾	.08	.07¾	.08	.07¾	.08
64-66 437 end point (blend)	.06¼		.06¼	.06½	.06½	

NATURAL GASOLINE

	Apr. 19		Apr. 12		Apr. 5	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼	.04½	.04¼	.04½	.04½	
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¾		.04¾	.05	.05	
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04⅛	.04	.04⅛	.04	.04⅛
Grade B, 76 83.9, 375 e. p., rec 85%	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04		.04		.03⅞	.04
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼	.04½	.04½		.04½	
Grade A, 72-79.9, 375 e p., rec. 90%	.04¾		.04¾	.05	.05	
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04⅛	.04	.04⅛	.04	.04⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅛	.04¼	.04⅛	.04¼	.04⅛	.04⅛
Grade C, 80-90, 375 e.p., rec. 78%	.04	.04⅛	.04	.04¼	.04	
NORTH LOUISIANA—						
Grade AA, 72-79.9, 375 e.p., rec. 90%	.05	.05¼	.05¼	.05½	.05¼	.05½
Grade BB, 76-83.9, 375 e.p., rec. 85%	.04¾	.05	.05	.05½	.05	.05¼
Grade C, 80-90, 375 e.p., rec. 78%	.04¼	.04½	.04¼	.04½	.04¼	.04½
CALIFORNIA—						
75 86, 375 390 end point			.07	.09½	.09	.11½
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	.04¾
Grade A, 72-79.9, 375 e p., rec. 90%	.04¾		.05		.05	.05½
Grade BB, 84 92, 375 e.p., rec. 85%	.04	.04⅛	.04⅛	.04¼	.04⅛	.04¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04¼		.04¼	.04½
Grade C, 80-90, 375 e.p., rec. 78%	.04		.04		.03¾	

BURNING OIL

	Apr. 19		Apr. 12		Apr. 5	
KANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¾	.05
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04½	.04¾
42-44 water white Kerosene	.04⅝	.04¾	.04¾	.05	.05	.05¼
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½	.04¾	.04½	.04¾	.04¾	.05
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04⅜	.04½
ARKANSAS—						
41-43 water white Kerosene	.04¾		.04¾	.05	.04¾	.05
PENNSYLVANIA—						
43 Kerosene prime white	.06½	.06¾	.06¾	.07	.06¾	.07
45 Kerosene water white	.06¾	.07	.06⅞	.07⅛	.07⅛	.07⅜
46 Kerosene water white	.07¼	.07½	.07¼	.07½	.07½	.07¾
47 Kerosene water white	.07½	.07¾	.07½	.07¾	.08	.08¼
300 Mineral Seal			.08¼	.08½	.08¼	.08½
CALIFORNIA—						
38-40 water white (high burning test)	.05¾	.06½	.05¾	.06½	.07	.07½
Engine distillate, 43-45 445 end point	.05½	.06	.05½	.06	07	.07½
Engine distillate, 42-44 480 end point	.04¼	.05½	.04¼	.05½	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04½	.04¾	.04¾	
42-44 water white Kerosene	.04¾	.05	.05	.05¼	.05	

FUEL OILS

	Apr. 19		Apr. 12		Apr. 5	
KANSAS—						
24-26 Fuel Oil	1.05	1.10	1.10	1.15	1.25	1.30
32-36 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.03⅛	03¼
38-40 Distillate	.03¼	.03½	.03¼	.03½	.03¾	.04
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.90	.95	.92½	.95	1.05	
18-22 Fuel Oil	.95	.97½	.95	.97½	1.05	1.07½
22-26 Fuel Oil	.95	.97½	.97½	1.00	1.07½	1.10
24-26 Fuel Oil	.97½	1.02½	1.02½	1.07½	1.12½	1.15
26-30 Fuel Oil	1.02½	1.05	1.07½	1.10	1.22½	1.25
28-30 Fuel Oil	1.05	1.10	1.10	1.12½	1.22½	1.25
32-36 Gas Oil (dark)	.02½	.02¾	.02⅝	.02¾	.02¾	.03
32-36 Gas Oil (Straw overhead)	.02½	.02¾	.02⅝	.02¾	.03¾	.03
36-38 Distillate	.03	.03¼	.03	.03¼	.03¼	
38-40 Straw Distillate	.03¼		.03¼		.03¼	.03½
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.90	.95	1.05	1.10	1.15	1.20
32-36 Gas Oil (straw)	.02½	.02⅝	.02⅝	.02¾	.02¾	.03
38-40 Straw Distillate	.02⅞	.03	.02⅞	.03	.03¼	.03½
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.15	1.17½	1.15	1.20
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
ARKANSAS—						
36-38 Distillate	.03½	.03¾	.03¾	.04	.04	
32-36 Gas Oil (straw)	.02¾	.03	.02⅞	.03	.03¼	.03½
16 20 Refinery Fuel Oil	.95		1.00	1.05	1.05	1.10
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04⅜	.04¼	.04⅜	.04⅜	.05
Fuel Oil	1.50	1.60	1.50	1.60	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.05⅛	.05¼	.05⅝	.05¾	.05⅞	.06
36-40 Fuel Oil	.05⅜	.05½	.05⅞	.06	.06	.06¼
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.04	.04⅛
27 32 Distillate	.03¼	.03¾	.03¼	.03¾	.03½	.04
*15-20 Fuel Oil, Bunkers (at tide water)	.92½	1.04	.92½	1.04	.92½	1.04
15-20 Fuel Oil (cargo lots)	.71	.75	.71	.75	.79	.87½
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.00	1.05	1.05	1.07½	1.15	1.20
22-26 Fuel Oil (sellers' cars) Group 3	1.00		1.02½	1.05	1.15	1 17½
18-22 (Group 3)	.97½	1.00	1.05	1.07½	1.07½	1.10
16-20 (Smackover)	1.15	1.17½	1.17½	1.20	1.20	
32-36 Gas Oil (zero)	.02¾	02⅞	.02¾	.03⅛	.03⅛	.03½
32-36 Gas Oil (industrial)	.02⅝	.02¾	.02⅝	.02¾	.02¾	.03
36-38 Distillate	.03	.03¼	.03¼		.03¼	.03⅜
38-40 Straw Distillate	.03¼	.03½	.03⅜	.03½	.03½	.03⅝

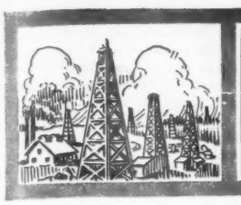
*Bunkers.

LUBRICATING OIL AND WAX

	Apr. 19		Apr. 12		Apr. 5	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06½	.06¾	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.06¼	.06½	.06½	.07	.06½	.07
150 vis , 3 color, 20-25 cold test	.08½	.08¾	.08½	.09	.08½	.09
150 vis., 4 color, 20-25 cold test	.08¼	.08½	.08¼	.08¾	.08¼	.08¾
180 vis., 3 color, 23 28 cold test	.10	.10¼	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 5 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 3 color, 23-28 cold test	.10½	.11	.10¼	.11	.10½	.11
200 vis., 4 color, 23-28 cold test	.10⅜	.10⅞	.10¼	.10¾	.10¼	.10⅜
200 vis., 5 color, 23-28 cold test	.10½	.10¾	.10½	.11	.10½	.11
240 vis., 3 color, 25 30 cold test	.14	.14¼	.13¼	.14	.13¼	.14
240 vis , 4 color, 25-30 cold test	.13½	.13¾	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.15¾	.16¼	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15¼	.15½	.15¼	.15½	.15¼	.15½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.07½	.10	.07½	.10	.07½	.10
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾	.03	.02¾	.03	.02¾	.03
PENNSYLVANIA—						
34 Neutral	.07¼	.07½	.07¼	.07½	.07½	.07¾
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08¼	.08¾
36 Miners' Neutral	.07	.07¼	.07	.07¼	.07¼	.07½
150, 3 color	.28¼	.28½	.28¼	.28½	.28¼	.28½
180, 3 color	.31¾	.32	.29¾	.30	.29¾	.30
200, 3 color	.33½	.34	.32½	.33	.32½	.33
220, 3 color	.35¼	.36	.34¼	.34½	.34¼	.34½
600, steam refined	.09	.09¼	.09¾	.10	.10½	.10¾
635, steam refined	.10¾	.11	.12¼	.12½	.12¾	.13
650, steam refined	.12¾	.13	.13¾	.14	.14¼	.14½
600, Pennsylvania flash	.17½	.18	.17½	.18	.17½	.18
630, Pennsylvania flash	.28½	.29	.28½	.29	.28½	.29
*550, E filtered	.17½	.18	.17½	.18	.18	.18½
*600, E filtered	.19½	.18½	.19½	.20	.19½	.20
600, E filtered	.18	.18½	.18	.18½	.18	.18½
600, D filtered	.25	.25½	.25¼	.25¾	.25¼	.25⅝
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.34½	.35	.34½	.35	.34½	.35
†122-124 White Crude Scale Wax	.03⅜	.03½	.03⅜	.03½	.03⅜	.03½
†124-126 White Crude Scale Wax	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08½	.07½	.08½	.07½	.08½
No. 3 color, 200 vis., pale oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 3 color, 300 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3½ color, 500 vis., pale oil	.13½	.14	.13½	.14	.13½	.14
No. 4 color, 750 vis., pale oil	.16	.16½	.16	.16½	.16	.16½
No. 5 to 6 color, 200 vis., red oil	.08½	.09½	.08½	.09½	.08½	.09½
No. 5 to 6 color, 300 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 to 6 color, 500 vis., red oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 5 to 6 color, 750 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 2 color, 200 vis., pale filtered	.14					
No. 2 color, 300 vis , pale filtered	.14	.15				
No. 2½ color, 500 vis., pale filtered	.16	.17				
No. 2½ color, 750 vis., pale filtered	.20					
CALIFORNIA—						
130 vis., 2½-3 color	.10½	.11	.10½	.11	.10½	.11
200 vis., 2½-3 color	.11	.11½	.11	.11½	.11	.11½



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

300 vis., 3 -3½ color	.11½	.12	.11½	.12	.11½	.12
350 vis., 3½-4 color	.12	.13	.12	.13	.12	.13
400 vis., 3½-4 color	.13	.15½	.13	.15½	.13	.15½
Red Neutral:						
200 vis., 4½-5 color	.09½	.10½	.09½	.10½	.09½	.10½
300 vis., 5 -6 color	.10½	.11½	.10½	.11½	.10½	.11½
400 vis., 5 -6 color	.12	.13½	.12	.13½	.12	.13½
500 vis., 4½-5 color	.13½	.14½	.13½	.14½	.13½	.14½
500 vis., 5 -6½ color	.12½	.13½	.12½	.13½	.12½	.13½
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13½	.14½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Apr. 19	Apr. 12	Apr. 5
Gasoline, U. S. Motor, 58-60 437	.09	.09	.09½
Kerosene, water white, 41-43	.07½	07½	.07½
*Fuel Oil, bunker "C," 14 16, per bbl.	1.75	1.75	1.75
*Fuel Oil, Diesel, 28-30, per bbl.	2.40	2.40	2.40
Gas Oil, 28 plus	.06	.06	.06
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07½	.07½	.07½
285 red Paraffin Oil	.13	.13	.13
250 red Paraffin Oil	.12	.12	.12
225 red Paraffin Oil	.11	.11	.11
200 red Paraffin Oil	.10	.10	.10
Refined Wax:			
120-122 a.mp., per lb.	.04⅛	.04⅛	.04
125-127 a.m.p , per lb.	.04¼	.04¼	.04⅛
130-132 a.m.p., per lb.	.04¾	.04¾	.04¾
135-137 a.m.p., per lb.	.05¼	.05¼	.05
Petrolatum, in bbls.; carload lots, per lb.:			
Dark green	.01⅞	.01⅞	.01⅞
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05½	.05½	.05½
Lily white	.07	.07	.07
Snow white	.08⅛	.08⅛	.08⅛

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Apr. 19	Apr. 12	Apr. 5
Gasoline, U. S. Motor, 58-60, 437, in cases.	.2440	.2440	.2440
Kerosene, standard white, in cases	.1665	.1665	.1665
Kerosene, water white, in cases	.1765	.1765	.1765
600 steam refined cylinder stock, in bbls.	.19	.19	.19
635 steam refined	.21	.21	.21
650 steam refined	.23	.23	.23
600 Pennsylvania flash	.27	.27	.27
630 Pennsylvania flash	.34	.34	.34
600 Warren E	.26	.26	.26
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.44	.44	.44
Dark 135 Bright Stock	.42	.42	.42

LOS ANGELES EXPORT PRICES

	Apr. 19	Apr. 12	Apr. 5
Kerosene water white	.04¾ .05	.04¾ .05	.05¾ .06½
U. S. Motor Gasoline, 53-55 437 e.p.	.06¼ .06½	.07 .07¼	.07¾ .08

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927).....$1.00
Other fields .....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County .....$ .95
*Hutchinson County ..... .95
Gray-Wheeler Counties.. See gravity table

*Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co. and Kay County Gas Co., March 14.

WEST TEXAS

*Iatan (Same as North Texas)
Crane-Upton-Crockett .....See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.16 for Howard County crude, effective March 12.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17).....$1.00
Bellevue (Feb. 24, 1927)..... 1.25
Urania (March 16, 1927)..... 1.00
East El Dorado (March 16)..... 1.00
Other fields .....See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14) $1.30
Grade B .....See gravity table
*Jennings, La. (March 14)..... 1.05
†Saratoga, Batson, Dayton (March 14, 1927) 1.30
**Markham March 14..... 1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. **The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (April 7) $1.00
†Mirando (March 14) 1.00
Rockdale-Minerva (Milam County)... 1.25
*Thrall ..... .75
Callihan (May 15) 1.75
Lytton Springs (Lockhart) See gravity table
Somerset .....See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19½ cents per cwt. freight.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12) $1.25
Salt Creek .....See gravity table
Big Muddy (March 12)..... 1.25
Mule Creek (February 23)..... 1.30
Grass Creek, light (March 12) 1.33
Grass Creek, heavy ..... .68
Elk Basin (March 12)..... 1.33
Lance Creek (March 12)..... 1.33
Poison Spider 1.00
Notches ..... .65
Rex Lake (February 23)..... 1.10
Osage 1.33
Lost Soldier (contract) (May 17)..... 1.60
Greybull-Torchlight 1.33
Hamilton Dome 1.35
Cat Creek (Mont.) 1.33
Sunburst (Mont.) (October 5)..... 1.35
Artesia (March 12) 1.00
Hogback (N. Mex.) (March 14)..... 1.30

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective March 7)

Penna Grade Oil in New York Transit Line (New York) $2.90
Brauford District Oil in National Transit Lines (Pennsylvania)..... 2.90
Penna Grade Oil in National Transit Lines (Pennsylvania)..... 2.80
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)..... 2.80
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania) 2.75

(Continued on Page 150)

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	Okla., Kans., N. C. Tex., La.-Ark. 1	Smackover, Ark. 2	Stephens, Ark. 3	Wheeler and Gray Counties, (Texas Panhandle) 4	Crane, Upton Crockett Counties, (West Texas) 5	Salt Creek, Wyo. 6	Grade B & Light Crude (G. Coast) 7	Somerset, (South Central Texas) 8
Below 24	....	1.00	....	....	....	....	....	....
24 to 24.9	....	1.25	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25 9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.70	....	....	....
26 to 26 9	....	....	....	....	.72	....	1.19	....
27 to 27 9	....	....	....	....	.74	....	1.21	....
Below 28	****	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.76	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.78	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.80	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.82	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.84	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.86	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.88	1.24	1.34	1.09
35 to 35.9	1.26	....	....	.94	.90	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.92	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule April 20, making price below 33 gravity 95 cents per barrel, with 2 cents increase per degree higher in gravity, making 33-33.9 gravity at 97 cents as basis, with a top price of $1.35 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 12; Carter Oil Co., The Texas Company, March 14.

North Central Texas—(including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs [Southwest Texas], Iatan and Panola [Magnolia only]. Currie, Nocona, Moran and Corsicana light): Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only): Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—Standard Oil Co. of Louisiana, The Texas Company, Gulf, Atlantic, March 17, Magnolia Petroleum Co. (March 16) posted price of $1.00 for below 24 degrees and $1.15 for 24 and above. Louisiana Oil Corp. posted following prices effective March 16: Below 24, $1.00; 24 to 27.9, $1.15; 28 to 28.9, $1.17; 29 to 29.9, $1.19; 30 and above $1.21.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14.

Column 5—Humble Oil & Refining Co., Kay County Gas Co. and Gulf Pipe Line Co., March 14.

Column 6—Midwest Refining Co., March 12, 1927. All crude over 37 gravity, $1.30 per bbl.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co. which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

****Prices for crude below 28 gravity: Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12, 1927; Arkansas, North Louisiana, March 14. Other companies 2 cents less for each degree with exception of Humble Oil & Refining Co. which pays $1.13 for crude below 28 degrees gravity.

CALIFORNIA CRUDE PRICES
***Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)**

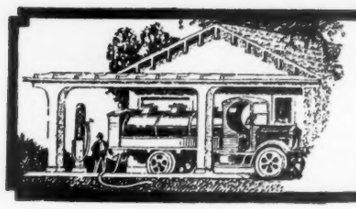
Gravity—	Fullerton Seal Beach Long Beach Huntington Beach Richfield Rosecrans-Dom'guez Torrance-Inglewood 1	Whittier La Habra Montebello 2	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills Coyote 3	Santa Fe Springs 4	Coalinga 5	Wheeler Ridge 6	Santa Maria Ventura, Orcutt Salt Lake 7	
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, April 19.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Chicago dist.	16 0	18 0	...	13 0
Decatur, Ill.	16 2	18.2	...	13 1
E. St. Louis	15.1	17 35	..	12.2
Joliet	16 4	18 4	...	13 3
Peoria	16.2	18 2	...	13.1
Quincy	14 2	16 2	...	10 9
Davenport, Ia.	18.5	20 5	2 0	13 3
Des Moines	16 0	18 0	2 0	13.3
Keokuk	18 5	20 5	2 0	13 3
Sioux City	18.1	20 1	2 0	12 9
Duluth, Minn.	19 5	21.5	2 0	13 9
Minneapolis	17.2	19 2	2 0	13 9
LaCrosse, Wis.	19 2	21 2	2 0	14 0
Milwaukee	18 1	20.1	2 0	12.9
Madison	18 3	20 3	2 0	13 1
Detroit, Mich.	18.8	20 8	2 0	14 7
Grand Rapids	18 7	20 7	2 0	14.6
Saginaw	18 9	20 9	2 0	14.8
Evansville, Ind.	19.0	21 0	3 0	14 0
Ft. Wayne	19 4	21 4	3 0	14 4
Indianapolis	19 2	21.2	3.0	14 2
S. Bend	19 4	21 4	3 0	14.4
Fargo, N. D.	20 9	22 9	2 0	15 9
Huron, S. D.	19 0	21 0	3 0	14 9
Sioux Falls	19.3	21 3	3 0	14 4
*K. C., Mo.	18 0	20 0	3.0	11.5
*Springfield	18.8	20 8	3 0	12 5
*St. Louis	17 6	19 9	2 5	12 3
*St. Joseph	18 5	20 5	3 0	12 2
Wichita, Kans.	16 8	18 8	2.0	11.8
Bartlesville, Ok.	17.0	19 0	3 0	11 8

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	17 0	11.75
V. M. & P. naphtha	19 0	13 75
Cleaner's naphtha	19 0	13.75
Stanisol	20 0	...

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL

Less than 100 gallons	10 0
100 to 799 gallons	9.0
800 or more gallons	8 5

Tankwagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

In addition the following quantity discount schedule is in effect on monthly tankwagon deliveries of gasoline 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. In the Chicago district purchases of 750 to 2,000 gallons a month discounted one-half cent; and, 2,000 to 6,000 gallons, three-quarters cent. If the quantity bought during the year is 12 times the monthly agreed purchases the discount is paid or credited on the entire quantity less monthly payments.

Monthly service station deliveries of 200 gallons or more, and annual deliveries of 2,400 gallons or more are discounted 2 cents.

*State tax 2 cents; remainder city tax.

SOUTHWESTERN DISTRICT
*Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Dallas, Tex.	13.0	16 0	3 0	15.0
Fort Worth	16 0	17.0	3.0	13 0
Houston	16 0	19 0	3 0	15.0
San Antonio	13 0	16.0	3 0	11 0
El Paso	17 0	19 0	3 0	16 0
Texarkana	15 0	18 0	3 0	15 0
Muskogee, Ok.	16.0	19.0	3 0	10 0
Okla. City	16.0	19 0	3 0	10 0
Tulsa	16 0	19 0	3.0	10 0
Little Rock	17 0	20 0	4 0	12 0
Ft. Smith, Ark.	17.0	20 0	4.0	12 0

* The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ¼c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 9,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

CENTRAL SOUTH DISTRICT
Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
*New Orleans	17.5	18.5	3 0	14 0
Baton Rouge	14.0	17 0	2 0	12 5
Alexandria	15 0	18 0	2.0	14 0
LaFayette	15 0	18 0	2 0	13 5
Lake Charles	15 5	18 5	2 0	14 0
Chattanooga	19 5	22 5	3 0	15.0
Shreveport, La.	14 0	17 0	2.0	13.0
Knoxville	19 5	22 5	3 0	15 0
Memphis, Tenn.	17 0	20.0	3 0	14 0
Nashville	16.5	19.5	3.0	15.0
Bristol	19 0	22 0	3 0	14.0
Lit. Rock, Ark.	17.0	20.0	4.0	12.0

*Tax of 3c includes city tax of 1c.
*Louisiana kerosene prices include 1-cent state tax and 1 cent parish tax.

OHIO
Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
All Ohio points	18 0	20 0	2.0	15.0

SOUTHERN DISTRICT
Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Atlanta, Ga.	20 0	23.0	4.0	16 0
Augusta	20 0	23 0	4 0	15 0
Macon	20 0	23.0	4 0	16 0
Savannah	20 0	22 0	4 0	15 0
Birm'ghm, Ala.	20 0	23 0	4.0	15.5
Mobile	19.0	22 0	4 0	15 0
Montgomery	21 0	24 0	5 0	16 5
Clarksd'le, Miss.	19 0	22 0	4 0	13 5
Jackson	19.0	22.0	4.0	14 5
Natchez	18 5	21 5	4 0	14 0
Gulfport	20.5	23 5	6 0	14 0
Vicksburg	18 5	21 5	4 0	14.0
Jack'ville, Fla.	18 0	21 0	4 0	14 0
Miami	20.0	23.0	4 0	15 5
Pensacola	19 0	22 0	5 0	15.0
Tampa	18.0	21 0	4 0	14.0
Covington	21 0	24.0	5 0	16.0
Louisville	19 0	22.0	5 0	16 0
Lexington, Ky.	20.0	23.0	5 0	16 0

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only. Pensacola tax includes 1c city levy. Gulfport tax includes privilege tax of 2c in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Pittsburgh, Pa.	17 0	*22 0	...	15 0
Philadelphia	16 0	21 0	...	15 0
Scranton	17.0	*22 0	...	15.0
Allentown	17 0	*22 0	...	15 0
Altoona	17 0	*22 0	...	15 0
Erie	14 0	19.0	...	15 0
Dover, Del.	20 0	23.0	2 0	15 0
Wilmington	20.0	23 0	2.0	15 0
Spring'd, Mas.	20 0	22 0	...	16 0
Worchester	20.0	22 0	...	16 0
Boston	20.0	22 0	...	15.0
Providence, R.I.	21 0	23 0	...	16.0
Hartford, Conn.	22 0	24.0	2 0	16 0
New Haven	22 0	24 0	2.0	16 0

*Includes tax of 2 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

ATLANTIC COAST DISTRICT
Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Atlantic City	16 0	....	...	14 0
Newark, N. J.	16.0	18.0	...	14 0
Annapolis, Md.	20 0	...	4 0	14 0
Baltimore	20 0	23 0	4.0	10 0
Cumberland	20 0	23 0	4.0	14 0
Washington	18 0	21 0	2.0	12.0
Danville, Va.	20 5	....	4 5	14 0
Norfolk	20.5	23 5	4 5	14.0
Petersburg	20 5	23 5	4 5	14 0
Roanoke	20.5	23.5	4.5	14.0
Richmond	20.5	23 5	4 5	14 0
Charleston, W. Va.	19.5	22.5	3 5	14 0
Keyser	19.5	....	3 5	14 0
Parkersburg	19 5	22 5	3 5	14.0
Wheeling	19 5	22 5	3 5	14 0
Charlotte, N. C.	20 0	23 0	4 0	14 0
Hickory	20.0	23 0	4 0	14.0
Mt. Airy	20.0	23 0	4 0	14 0
Salisbury	20 0	23 0	4 0	14.0
Charl'stn, S. C.	20.0	23 0	5 0	14 0
Columbia	20 0	20 0	5.0	15 0

PACIFIC COAST DISTRICT
Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
San Francisco	11 0	15 0	2.0	15 5
Los Angeles	08 5	10.5	2 0	15 5
Fresno	*11 0	15.0	2 0	17 5
Reno, Nev.	19 0	23 0	4 0	19 0
Portland, Ore.	14 0	18 0	3 0	16.5
Seattle, Wash.	13 0	17.0	2 0	16.5
Tacoma	13 0	17 0	2.0	16 5
Spokane	15.0	19 0	2 0	20 5
Phoenix, Ariz.	19 0	23.0	3.0	20 5

NEBRASKA
Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Omaha	16 25	19 25	2 0	13.25
McCook	19.75	21 75	2 0	14 75
Norfolk	18 0	20 0	2.0	13 75
N. Platte	19.75	21 75	2 0	14 50
Scottsbluff	19.25	21.25	2.0	14.00

NEW YORK AND PART OF NEW ENGLAND DISTRICT
Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Albany, N. Y.	19 0	21 0	...	16 0
*New York	19 0	23 0	...	16 0
Buffalo	18 0	21 0	...	14 0
Rochester	17 0	20 0	...	14.0
Syracuse	19 0	21 0	...	16 0
Boston, Mass.	19 0	21 0	...	15.0
Augusta, Me.	22.0	26.0	3.0	16.0
Manchester, N. H.	21 0	23.0	2 0	16.0
Burlington, Vt.	21.0	23.0	2.0	16 0

*Price in steel barrels.

ROCKY MOUNTAIN DISTRICT
Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Inclds tax of	Tank wagon
Denver, Colo.	17 0	17.0	2.0	15 5
Pueblo	17 0	18.0	2 0	15 5
Grand Junction	20 5	22 5	2 0	19 0
Casper, Wyo.	18.0	20 0	3.0	14 0
Cheyenne	18 0	20 0	3.0	15 5
Butte, Mont.	22 0	22 0	3 0	19 0
Helena	22 0	24.0	3 0	19.0
Salt Lake, Utah	21 0	23 0	3 5	17 0
Boise, Idaho	23 5	25.5	4 0	19 0
Twin Falls	23 5	25.5	4 0	19.0
Albuquerque, N. M.	22 0	25 0	5.0	18.0

TANK WAGON CHANGES

April 6—Standard Oil Co. of New Jersey reduced the gasoline tankwagon and station prices 1 cent throughout their territory except in South Carolina, where reduction was 2 cents.

April 9—Continental Oil Co. reduced the gasoline station price 2 cents at Denver.

April 13—Continental Oil Co. reduced the gasoline tank wagon and station prices 2 cents at Cheyenne, Wyo.

April 14—Standard Oil Co. of New York reduced the gasoline tank wagon and station prices 1 cent at Rochester.

April 15—Standard Oil Co. of California reduced the gasoline tank wagon and station prices 2 cents in Los Angeles.

April 15—Magnolia Petroleum Co. reduced the gasoline tank wagon and station prices 1 cent at Dallas, Tex.

April 16—Standard Oil Co. of California reduced the gasoline tank wagon and station prices 2 cents at San Francisco.

April 18—Standard Oil Co. of Indiana reduced the tank car prices on all grades of naphtha three-fourths cent and reduced the tank wagon price 1 cent.

April 20—Standard Oil Co. of Ohio reduced the gasoline tank wagon and station prices 2 cents throughout Ohio.

CRUDE CHANGES

April 13—Joseph Seep Purchasing Agency reduced the price of Kiester crude 15 cents per barrel, and reduced all other grades of Pennsylvania crudes it purchases 25 cents.

April 18—Joseph Seep Purchasing Agency reduced both grades of Somerset crude 10 cents per barrel. Corning reduced 10 cents.

April 20—Magnolia Petroleum Co. reduced its price schedule 10 cents a barrel.

PENNSYLVANIA MARKET NOT AFFECTED BY CUT

OIL CITY, Pa., Apr. 16.—Most of the products on the refined market list in Pennsylvania were not affected by the decrease in the prices of Pennsylvania grade crude oils during the past week and the market as a whole seems to be in as good condition as it was at the end of the previous week.

Gasoline has been moving better but there has been no strengthening in the price structure and the most of those who carefully note conditions in the oil industry do not believe that it will be any better in price soon. The weight of gasoline in storage is too heavy and the crude oil market is too soft. Increased demand was brought about by better consumption which has forced the jobbers into the buying column.

The movement of kerosene was much better during the week and the price was stronger. The fuel oil market is soft and there is little buying. This is due to a decrease in the amount being used for cracking purposes and also to a slackening of mill and shop business. Wax is still soft but the refiners and jobbers report that inquiries are becoming more numerous and they believe that the product is on bottom now. Neutrals continue to be exceedingly strong in even a better position than a week ago. There has been a little flurry in buying. Recently jobbers held off buying in anticipation of a break in prices but there was no such break and many experts believe that there can not be one on account of the tremendous demand for this product. Cylinder stocks are in about the same condition as last week. Bright stock is in good demand.

BIG COMBINATION MAP COVERS TEXAS AREAS

A combination map of North and West Texas and the Panhandle has just recently been compiled by the Oil City Map Co. of Fort Worth, Tex. It covers an area 540 miles long and approximately 450 miles in width, extending from the Rio Grande to the Panhandle of Oklahoma in a north-south direction, and from Culberson County to Fort Worth in an east-west direction. It embraces 142 counties in Texas, 8 in New Mexico and 6 in Oklahoma.

This combination map is really made up of three separate maps, one covering Northwest Texas and the Panhandle down to Motley, Floyd, Hale, Lamb, etc., counties; another covering Southwest Texas from the Dickens-Motley line down to the Rio Grande, and a third covering North Central Texas from southern Oklahoma down to Uvalde, Medina and Bexar Counties, and from the west line of Childress County to Fort Worth.

SPENCER BUYS COMPANY

CHICAGO, Apr. 16.—The Spencer Petroleum Co. of this city has bought the St. Joseph Viscosity Oil Co. of St. Joseph, Mo., and will continue the business as the Viscosity Oil Co., with A. D. Bailey as manager. The company handles a full line of products and does a large tank truck business in fuel oils in its vicinity.

CRUDE OIL PRICES

(Continued from Page 149)

Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.60
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) March 16	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) March 16	1.50
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	.95
Keister (Pennsylvania)	1.10

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.77
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1.38
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.35
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (November 18)	1.35
‖Oil Springs (Canada)	2.18
‖Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
‖Posted by Imperial Oil Co., Ltd.

MEXICO
(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports)	$1.85
†Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.80

*Plus 32.328c tax. †17.681c tax.

This SIGN

is for the dealer who builds his business on the solid foundation of Good Will

WHEN a Dealer displays this sign, his business grows! Why?—because back of this sign is a successful method for giving motorists *correct lubrication!*

When a man drives his car in for oil, the Authorized Opaline Dealer looks at the speedometer and finds out the car's mileage—then he looks at the Sinclair Recommendation Index and finds out which grade of Opaline Motor Oil the car needs. He gives the motorist exactly the right grade to fit the degree of wear in the engine as indicated by the mileage.

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Brief Items for Plant Operators

Gasoline Extraction Method May Be Tried In Mid-Continent

A new method of extracting gasoline from casinghead gas probably will be tried out in the Mid-Continent Field, according to Dr. Emeric Kroch, assistant technical manager of the Societe Belge de Recuperation Industrielle. Doctor Kroch has been in Tulsa and other Mid-Continent points, making arrangements for the installation, which will be the first made in this country.

The installation will include what is known as the Bregeat process. This process, as explained by Doctor Kroch, was developed during the World War, and has been used extensively in the smokeless powder works of the Allies in France, England, and Belgium. For solvents like alcohol, ether, acetone, ethyl acetate, the "chemical" absorbent was raw cresol, a mixture of o-, m-, and p- cresols. It has been proved by laboratory research that this absorbent enters into a chemical combination with alcohol, ether, etc., forming complex compounds. Although stable at temperatures below 100 degrees Fahrenheit, these complexes are easily dissociated at a temperature around 300 degrees Fahrenheit. The vapor pressure of systems like cresol-alcohol or cresol-ether is considerably below the value calculated from the laws of Raoult-van t' Hoff.

In a similar way, a chemical absorbent for hydrocarbons was discovered by J. H. Bregeat in the product known as tetrahydronaphtaline, or commercially, tetraline. Although discovered more than a quarter of a century ago (Sabatier), the industrial manufacture of it on a large scale began only a few years ago. It is now being manufactured by two chemical concerns, one in Germany and one in this country. The procedure consists in a direct hydrogenation of purified naphthaline in presence of finely divided nickel. The properties of commercial tetraline are given below:

Chemical formula: $C_{10}H_{12}$.
Molecular weight: 132.
Specific gravity at 60° F.: 0.978.
Boiling point: 403-405° F.
Freezing point: Very low.
Viscosity: Same as water.
Heating value: 20,000 B.t.u./lb.

Due to the chemical affinity of tetraline for the different hydrocarbons, beginning somewhere between the propane and the butane, no artificial pressure is required for an efficient absorption. This is a great advantage over all other liquid absorbents, considering the high first cost and upkeep of compressing machinery. Resistance against the resinifying action of oxygen, often present in natural gas, always in refinery vapors, is another feature of this absorbent. Tetraline does not absorb as many and as much of sulphur compounds as mineral oil absorbent do, and the cost of sweetening of the recovered product is therefore lower.

The operation of a tetraline plant is almost identical with that of an oil absorption plant. The stripping of the enriched tetraline takes place at around 300 degrees Fahrenheit, the heating being effected by closed steam coils on large surfaces. Through suitable arrangement, a stable and yet high gravity product may be obtained in one operation.

ROXANA STARTS PLANT IN FLUHMAN FIELD

WICHITA FALLS, Tex., Apr. 16.—The Roxana Petroleum Corp. has started operating a three unit combination natural gasoline plant in the Fluhman Field of North Central Texas. The field is 16 miles from Vernon. The plant is a portable and was moved to the Texas site from the Braman Field in Oklahoma.

Following the installation of the plant several changes in the personnel of the Wichita Falls district office were made. T. B. Winningham was made plant superintendent and R. G. Gillion was sent to Vernon in charge of gas plant records. E. N. Van Duzee, engineer in charge of pipe lines for the plant, was transferred to the West Texas fields. J. D. Sikes was transferred to Olney as district gauger. L. A. McClain was transferred from Smackover to the Wichita Falls office. The remaining personnel, L. L. Lookabaugh, district superintendent, R. M. Berry, chief clerk and E. H. Tallafson, was not changed.

NEW GASOLINE PLANT ON SHACKELFORD LEASE

Roeser & Pendleton's second gasoline plant in Shackelford County is scheduled to start up this week. It is located on the Moberly lease, in what is known as the Hope Pool, about 6 miles due west of Albany, and will have a capacity of 3,000,000 feet of gas daily. The gas in this area tests a little better than 2 gallons per thousand feet so the plant will have a capacity of about 3,000 gallons.

The equipment consists of three 80-horsepower Clark engines with one recompressor and an auxiliary engine, making it practically a five-unit plant. Newton absorption and distillation and Braun cooling system are used. Four 20,000-gallon storage tanks are also being erected.

The Cook Pool plant, belonging to the same concern, consists of nine units and is making better than 21,000 gallons daily.

HIGHER GASOLINE RECOVERY

A plant is being built by the newly-organized Ventura Fuel Co. operating in California, which will compress the natural gas to 350 pounds per square inch to effect a higher gasoline recovery. The plant is located at Saticoy and will require an investment of $60,000.

SEMINOLE NATURAL GASOLINE YIELD 300,000 GALLONS DAILY

The Seminole Field of Oklahoma which is constantly making new records in the production of crude oil has also become one of the major fields of the industry from the standpoint of natural gasoline output. A check made during the past week showed an actual daily production in excess of 300,000 gallons.

Most of this production has been developed during the past six weeks. Its importance to the natural gasoline industry is apparent when the new production is compared to that in other areas. The February report (latest available) of the Bureau of Mines showed a daily natural gasoline production in Oklahoma and Kansas of 1,500,000 gallons. The production of the Seminole Field at that time was probably less than 50,000 gallons daily. Thus the new plants starting up in the Seminole since February have added 250,000 gallons daily or 16 per cent to the total production of the two states. In addition to this, plants are now under construction in that field which will have a combined capacity of 121,000 gallons.

Present Market Structure

The market structure has been discouraging to many of the companies in expanding their facilities and no particular attention has been paid to increasing their capacity other than to supply and adequate volume of gas for the gas lift in the operation of the wells. Likewise, the low prices will not permit a great expense in getting the highest possible recovery. In one case at least, the residue gas contains up to one quart of gasoline per thousand feet of gas.

The total production of the field may easily reach 400,000 gallons daily within the next month and, expressed in cars of gasoline ready for the market, this is equal to the production of refinery gasoline from a 20,000-bbl. modern plant with cracking facilities. The accompanying table shows the estimated production of plants now operating in the field and indicates their daily capacities. In some cases the plants have produced in excess of the originally estimated capacities so that it is difficult to set a maximum until the operation is settled and the plants are

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250,000 GALLONS NEW PANHANDLE OUTPUT

The Panhandle area of Texas which next to the Seminole Field of Oklahoma is furnishing more new natural gasoline production than any other section in United States, now has a daily output in excess of 250,000 gallons daily. The production is coming from 14 companies which have one or more plants located in that area.

Following is a list of the companies operating in the Panhandle area and their approximate daily output in gallons at the present time:

Company	Daily Production
Atlantic Oil Producing Co.	9,500
Asso. Producers Gaso. Co.	6,500
Coyle-McQuire	10,000
Dixon Creek Oil Co including Cockrell & McIlroy	4,500
Mariand Oil Co	17,000
Phillips Petroleum Co.	120,000
Roxana Pet. Corp.	19,000
Skelly Oil Co	60,000
Cannon Gasoline Co	1,500
Empire Gasoline Co	4,000
Magnolia Petroleum Co.	3,800
Wilcox Oil & Gas Co.	10,000
Phelps Gasoline Co.	1,000
Total	266,800

AMONG THE TECHNICAL MEN

The Pure Oil Co. recently has placed the superintendency of its Heath, Ohio, refinery in the hands of R. D. McClaren, one of the youngest plant operators in the eastern fields. He has been with that company for 12 years, starting with the Muskogee Refining Co. in 1915.

R. D. McClaren

Beginning as a telegraph operator he was advanced through the offices at Muskogee and was then transferred to the Tulsa headquarters.

Later he was transferred to the Muskogee plant and for five years he was office manager at the refinery. During that time he gradually assumed more of the operating duties.

While at Muskogee the refinery was enlarged and cracking units added along with the rebuilding and enlarging of the lubricating oil plant. He was active in carrying out much of the detailed work of these installations.

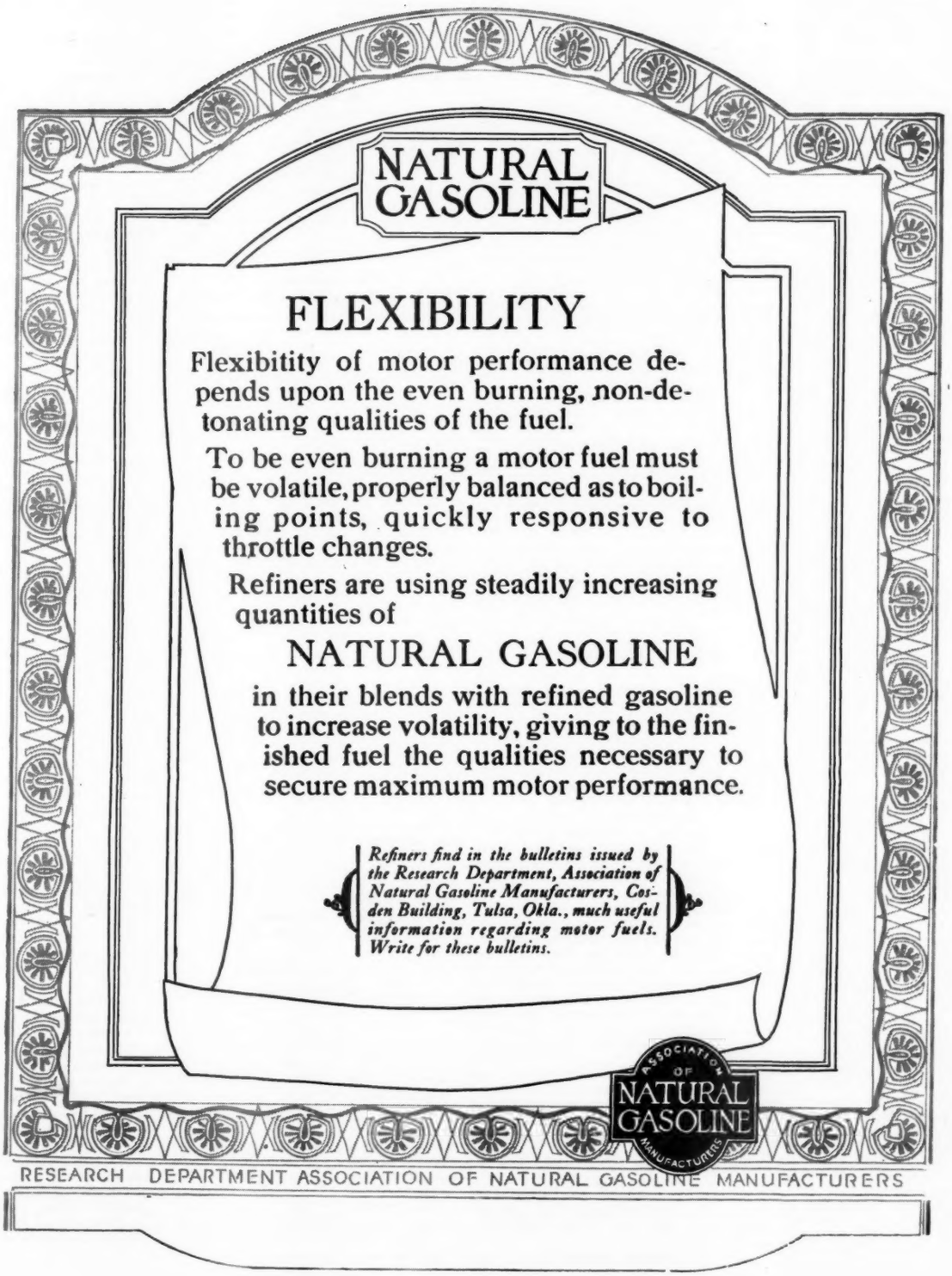
This gave him an opportunity to become acquainted with every branch of the refinery operations and with the office experiences gained previously, he was qualified to take the position he now holds.

In December of last year he was transferred to Warren, Pa., to take charge of the closing and dismantling of the Cornplanter refinery. Following the resignation of J. F. Miller, Mr. McClaren was made superintendent of the Heath plant. That plant is one of the largest of the Pure Oil group, having a daily capacity of 5,000 bbls., with 6,000 bbls. cracking capacity.

CLYDE M. ALEXANDER MADE SUPERINTENDENT

C. M. Alexander, who has been doing consulting work in the Mid-Continent and Gulf Coast areas for several years, has been appointed general superintendent of refineries for the Imperial Refining Co. and the Kettle Creek Refining Co. The two companies, which are owned by the W. B. Hassett interests, operate refineries at Ardmore, Okla., and El Dorado, Ark. Mr. Alexander for several months served the companies as a consulting engineer while large improvement programs were under way.

C. M. Alexander


NATURAL GASOLINE
FLEXIBILITY
Flexibitity of motor performance depends upon the even burning, non-detonating qualities of the fuel.
To be even burning a motor fuel must be volatile, properly balanced as to boiling points, quickly responsive to throttle changes.
Refiners are using steadily increasing quantities of
NATURAL GASOLINE
in their blends with refined gasoline to increase volatility, giving to the finished fuel the qualities necessary to secure maximum motor performance.
Refiners find in the bulletins issued by the Research Department, Association of Natural Gasoline Manufacturers, Cosden Building, Tulsa, Okla., much useful information regarding motor fuels. Write for these bulletins.
ASSOCIATION OF NATURAL GASOLINE MANUFACTURERS
RESEARCH DEPARTMENT ASSOCIATION OF NATURAL GASOLINE MANUFACTURERS

CHICAGO REFINED MARKET UNCHANGED

(Continued from Page 142)

yet and in the meanwhile there may be accumulations of gas oil or a change in the gasoline market might come that would start the cracking plants and reduce the supply of straightrun gas oil while increasing the quantity of cracked product. It is an interesting situation and one that will bear watching. From present indications, cracked gas oil will be the most largely sold fuel for domestic oil burners next fall and winter. The prevailing market for such a product today is 2¾ with the darker high flash oil suitable for industrial users, held generally for 2⅝ cents. There seems to be very little distress oil offered and it is stated that many of the larger dealers have disposed of their surplus, and are not adding to their stocks right now.

Fuel Oil Situation

Fuel oil is in a rather peculiar position. The demand is just about as it has been for several weeks, in fact there has been much the same condition all through the season of larger demand. The users have held back their business, have bought the least expensive fuel oils and have done all that they could to depress prices. They are continuing their tactics and making the most of every occurrence that they can twist to have a bearing on the price of what they want to buy. Apparently they are getting some results for one large refiner that has talked the highest of prices came out with a quotation direct to the large consumers of 90 cents for their oil stated to be a full 16 gravity fuel oil. Other heavy oils are selling at 95 cents to $1 and 24-26 gravity fuel oil has been bought by dealers for resale at $1. The higher gravities seem all out of line. For a good 28-30 refinery oil with a fairly low cold test it has been necessary to pay as high as $1.20 a barrel and as a consequence dealers are substituting gas oil and telling users that if they will run it into their tanks it will reduce the heavier oils in that tank and make practically a clean tank. There are very few inquiries for any quantities of fuel oil. One of the steel companies asked for prices on about 100 cars over 90 days.

There is nothing new in the Smackover situation except that the tendency is towards lower quotations and lower prices of not over $1.15 have been established for that oil.

Lub Oils Active

The lubricating oil movement is more active on orders but there is only a moderate amount of new business being placed and to secure this, eastern and western refiners and consumers are meeting with very active competition from refiners in the central states. These are cutting under the Mid-Continent refiners around 2 cents on the pale oils. In some instances oils quoted at 11½ to 12 cents Group 3 are being delivered at Detroit in one instance at a price that figures 9 cents Group 3. The Standard Oil Co. of Indiana is an active seller of its lubricating oils. The consumption of motor oils is good, paralleling that of gasoline. The industrial demand is fairly active. Waxes are weak here and very freely offered.

Tank Wagon Market

There is nothing new in the tank wagon situation. The improvement in gallonage as compared with April of last year has been mentioned. Open price cutting is the exception rather than the rule. Still there is a great deal of the giving of concessions for the purpose of increasing sales, a plan which the independent dealers claim is approved by the major companies through their adoption of the Q. D. A. The major companies claim that this plan was forced on them by the persistant concession giving by the independent dealer. The cash customer who drives into the station usually pays the full price. Nearly everybody except that cash customer gets his for less. The general opinion now is that the present tank wagon scale will hold through the spring at least, some say until it is time to advance it. Those expecting an increase in prices later may find them as slow to advance as they have been to move downward.

SOUTHWEST WILDCATS

(Continued from Page 138)

NE cor., is rigging up. Houston Oil Co.'s No. 17 Cartwright, Cannon Survey, 1,500 feet southwest of No. 1 Riverbed, is drilling at 800 feet; No. 1 Dunning M. B. Kivlin Survey, has set casing at 2,053 feet. J. W. Walton's No. 1 Roberts, west of Three Rivers, at 1,740 feet has tested four sands all of which showed gas.

Medina County

Schermerhorn Oil Co.'s test on the John Degent Survey has derrick up. Witherspoon Oil Co.'s No. 2 Redus, Survey 92, has set casing at 910 feet; No. 1 Nixon, Survey 119, located 1,500 feet to east line and 1,500 feet to south line, is testing at 850 feet. R. P. O'Brien's No. 1 J. P. Nixon, Survey 531, is drilling at 755 feet with small show of gas at 640 feet. Fennell & Williams' No. 1 John, Fohn, Survey 115 is drilling at 1,102 feet. J. H. Gray and others No. 1 Louis Mann, Survey 16, located 350 feet to north line of farm and 350 feet west of river, is having a little trouble setting liner at 1,158 feet. Ina Oil Co.'s No. 2 Finger, Survey 746, Lot 2, located 300 feet south of No. 1, is drilling at 1,400 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center at 820 feet had flow of salt water and has set 15-inch casing to shut off water, now shut down to wait for cement to set. Johnstone & Hout's No. 1 Whipff, 9 miles from Eagle Pass, is lowering 8¼-inch casing at 1,210 feet. Rycade Oil Corp.'s No. 1 Chittim is drilling at 5,580 feet (corrected depth). No. 2 Sullivan is drilling at 3,790 feet (corrected depth).

McMullen County

Nelson & Woods' No. 1 Shiner, Block 74, Survey 48, at 1,000 varas to east line and 350 varas to south line, is shut down at 783 feet for repairs. George Pickett's No. 1 Jacobs, Survey 7, located 660 feet to north line, is coring at 1,035 feet. George E. Pope's No. 4 Shiner, Survey 47, Block 46, has been abandoned at 1,550 feet with dry sand from 1,510-50 feet.

Nueces County

Pearson and others' No. 1 John Dunn, south side of Nueces Bay, is on gas sand at 2,363 feet; No. 1 Weil has derrick up, location west of Corpus Christi.

San Patricio County

F. S. Smiley has derrick up for No. 1 T. E. Wilson, one quarter of a mile northwest of Angelita and several miles south of Odem. W. L. Pearson and others' No. 4 Cage, Rachal Survey, is at 2,140 feet waiting for casing to set to make test; location has been made for No. 6 Cage in the Rachal Survey. Huber-Crawford's No. 1 Mathis, Delgavo Survey, Block 17, located 300 feet to northwest lines and 2,500 feet to southwest lines, is shut down at 1,400 feet. John Sigmund's No. 7 McCampbell has hole nearly cleaned out to the total depth of 4,021 feet and will then start making new hole.

San Saba County

Wilmot Oil Co.'s No. 1 Rocky Pastures, 9 miles northeast of San Saba, has been abandoned with tools lost in the hole; No. 2 Rocky Pastures has been spudded in 50 feet from No. 1 and is drilling at 900 feet.

Wilson County

Thomas and others' No. 1 August Haese, J. S. Moore Survey No. 124, at 300 feet to NE cor., is rebuilding derrick.

Zavala County

J. G. Pundt has derrick material ordered out for test on the West ranch.

MEXICO IS ESTIMATED TOO HIGH THIS YEAR

(Continued from Page 38)

wells ranged, initial head, from 25 to 1,000 bbls., with an average of say 350 bbls. The Isthmus can claim all but two, one of which was finished in Tabasco and one in Chiapas.

Tank Car Delieveries

Tank car deliveries in 1926 for domestic consumption at interior points showed a decline from the 1925 movement of 662,810 bbls. The approximate figures follow:

	Bbls.
From Tampico—	
Fuel oil (topped and crude)	8,640,897
Refined	803,575
Total	9,444,472
From Minatitlan—	
Fuel oil and refined	59,400
Grand total	9,503,872

The above figures do not include case goods nor drums, as figures for this class of interior deliveries are not available.

In Storage

Oil in steel storage in Mexican fields, refineries and terminals at the end of 1926 was as follows: Heavy crude, 6,171,553 bbls.; light crude, 2,361,383 bbls.; topped crudes (fuel oil), 5,207,040 bbls.; refined oils, 1,204,861 bbls.; total, 14,944,837 bbls.. The volume of steel storage, as indicated above, on January 1, 1926, was 20,173,248 bbls. Decrease December 31, 1926, 5,228,411 bbls.

In Conclusion

A Cassandra might foretell just what 1927 will bring about in the oil industry in Mexico, but a Cassandra would be treading on dangerous ground. Operators, both large and small, continue to complain of permits long delayed, or of a lack of them altogether. There is one thing only that can steady the industry from the viewpoint of production—which is petroleum's only potent viewpoint—and that is a broad and comprehensive wildcatting campaign for new pools; and such a campaign is not in sight. So far as the present year is concerned, even should such a campaign be inaugurated almost immediately it is hardly possible, under the law of averages, that new production in any volume from distinctive new pools could be secured, and transport completed to tidewater, in time to affect materially the present year. There is always the element of luck in the exploration for the elusive "black gold," that is true; but luck is as fickle in a prospective oil field as is the Great God Pan.

Some authorities consider that Mexico will produce 70,000,000 bbls. the present year. With full knowledge that this is written after their estimates have been made, which is a credit to them, it might not be amiss at this time to say that from 60,000,000 to 65,000,000 bbls. is the more conservative figure.

GAS FLOW THROUGH HIGH-PRESSURE LINES

(Continued from Page 40)

The various pipe line flow formulas that have been developed and used for calculating pipe line flows are as follows:

General formula:

$$Q = C \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{LG}}$$

which gives the relation between the quantity of gas Q and the various factors that have been considered to influence the flow of gas.

Cox formula:

$$Q = 3000 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}} \quad G = 65$$

Rix formula:

$$Q = 2680 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{LG}}$$

Towl formula:

$$Q = 50 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}}$$

Pittsburgh formula:

$$Q = 3450 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}}$$

When transferred to the general formula, the constants for these four formulas are:

Cox—2419
Rix—2680
Towl—2782
Pittsburgh—2672

which is a total variation of over 10 per cent in the coefficient.

Oiliphant's formula:

$$Q = 42a \sqrt{\frac{P_1^2 - P_2^2}{L}} \quad G = 0.6 \quad L = \text{Miles}$$

$$A = \sqrt{\frac{D^2 + D^2}{30}} \quad T = 60°$$

Unwins and Weymouth's formulas have been given.

Spitzglas:

$$Q = 64.3 \left(\frac{PAd^5}{SL\left(1 + \frac{3.6}{d} + 0.03d\right)} \right)^{\frac{1}{2}}$$

Q = Standard cu. ft. per hour.
A = mean pressure.
d = internal diameter.
S = density.
L = length in miles.

Comparison of Results From Formulas

A few results from calculating pipe line flows with the pipe line flow formulas, assuming certain operating conditions have been selected at random and are shown below:

Conditions					Discharge—M cu. ft. per 24 hours.						
Diam. Ins.	Length Miles	P	P	G	Oiliphant	Weymouth	Cox	Rix	Towl	Pittsburgh	Spitzglas.
2	15	400	200	.6	547	516	535	596	617	591	447
2	10	200	100	.6	343	328	341	380	396	376	285
8	70	210	41	.6	4992	5328	4428	4913	5112	4896	
8	20	214	40	.6	9418		8808	9761	10130	8932	

Scope of the Study

As explained, the purpose of the study of gas flow through pipe lines is to obtain information for design of the lines and the capacity effects to be expected under different operating conditions. The results that are desired and which should be obtained by completing the study are as follows:

(1) Establishing a dependable formula, or formulas, for calculating the flow through pipe lines of different sizes under various operating conditions.

(2) Determining the effect of frictional resistance on pipe line flow; both skin friction due to the contact with the surface of the pipe and internal molecular friction, or viscosity, due to the friction between the gas molecules themselves.

(3) Determining, from practical studies during field operation, the relation between pressure-drop per unit length of line and quantity flowing, increase or decrease of velocity and other flow characteristics that will affect the quantity results.

(4) Results from conducting a pressure variation study throughout the length of representative lines that are tested, taking into special consideration the effect of each kind of fitting and expressing the results in equivalent lengths of line. At present, the plan is to use an orifice for a basis in the same manner that a right angle elbow is used in oil transportation flow.

(5) Determining a relation between the total resistance to gas flow and diameter of the pipe.

(6) Determining the maximum variation in flow due to the different conditions of the internal surface of the pipe, or in other words the maximum variation in flow due to a maximum change, typical to operating transmission lines, of the skin friction of each size pipe.

(7) Determining the effects, if any, of the chemical composition of each kind of gas transported, the water content, the gasoline content, and various other physical conditions of natural gas that are not typical of theoretical considerations.

(8) Determining the effect of the compressibility of gas, or deviation from Boyle's law, as it relates to the theoretical considerations and the pressure-drop per unit length of line in practical operation.

(9) Obtaining data from a few lines which can be used for measurements over rather a long period of time, at least a year so as to get seasonal changes, and certain pressure changes, and on which

lines the metering equipment will be kept in good order.

(10) Determining the capacity or build-up effects in any pipe line on the measurement by considering "feed-in" to the line at different connections and also the actual volume and pressure changes in the line due to fluctuating demand conditions.

(11) Obtaining data from experimental work which is planned so that a sufficient number of pipe lines can be selected and a wide range of operating conditions included to make the result applicable to any operating conditions.

It will be necessary to investigate carefully the last 10 of the above items before any conclusive conclusions can be offered that will change the existing pipe line flow formulas. At the present stage of the work it is not known that a new formula will be developed. Instead, actual data are to be taken from field tests on transmission lines under various operating conditions, and the results of quantity measurements as obtained in these tests will be compared with quantities as obtained by solving existing pipe line flow formulas.

Physical Properties

One of the factors that has caused much discussion in pipe line flow formulas is the difference in various physical properties of different natural gases. These physical properties that affect the flow of gas are the actual chemical composition of the gas, the compressibility or deviation from Boyle's law, the gravity, and possibly the viscosity. Accordingly, as a preliminary study to the pipe line flow formula problem, as many samples of different natural gases as possible have been collected and a determination of the physical properties of each gas has been attempted as follows:

(1) The chemical compositions have been obtained by accurate analyses in the chemical laboratory of the helium division of the United States Bureau of Mines at Forth Worth, Tex.

(2) The compressibility at definite pressures have been obtained with a specially designed apparatus employing the principle of water displacement. The gas, under the desired pressure is expanded from a small container of known volume to atmospheric pressure. The expansion is made through a large container filled with water, the water being displaced and measured as the gas is expanded from a high pressure and comparatively small volume to atmospheric pressure and the resulting volume. A comparison of the theoretical expansion that should apply to a perfect gas and the expansion that actually is measured then is made after correcting the experimental results for vapor pressure, temperature, and other influencing factors. A series of curves representing the relation between pressure and the deviation factor have been made for several samples of natural gas.

(3) The gravities of the gases have been obtained with the improved type Bureau of Mines gravity balance.

(4) The total frictional resistance factors, which simply compare the frictional resistance as offered to gas flow compared to the resistance offered to air flow, have been obtained by discharging gas and air respectively through 150 feet of ⅛-inch copper tubing, coiled and placed in a water bath to maintain constant temperature conditions, and comparing the rates of flow. No attempt yet has been made to separate the actual skin friction and the internal molecular frictional effects.

As the work progresses on field tests of natural gas transmission lines, it is planned to obtain a representative sample of each gas that flows through the pipe line that is used for the experimental work, and determine each of these four main physical properties.

Field Laboratory Experiments

In any research problems where several variable factors influence the results that are obtained, it is desirable to have as many of the factors under control as possible. The ideal condition for experimentation is to control all of the factors with a single exception of one variable during the performance of an individual experiment. Field tests on operating pipe lines to obtain data for pipe line flow formula calculations involve such variable factors as quantities, pressures, velocities, build-up conditions, temperatures, conditions of internal surfaces of different pipe lines, changes in the physical characteristics of the gas, and other factors that have a decided influence on the measurements and which without a good knowledge of their probable actions could not be accounted for very accurately. As a result, it has been decided by the Transportation Committee that a series of field laboratory experiments, where the different factors could be controlled, are desirable in order to interpret properly the results of field tests on transmission lines.

The plans for the field laboratory tests are to construct different sizes of short pipe lines, at least 1,000 feet long, in the Chickasha gas field and use them for special flow tests. Three types of construction will be used, and the following sizes of lines will be built:

(1) For screwed line construction, the diameters will be 2, 3 and 6 inches.

(2) For rubber coupled line construction, the diameters will be 2, 3, 4, 6 and 8 inches.

(3) For welded line construction, the diameters will be 3 and 6 inches.

Each set of lines for each kind of construction will be built as a manifold unit, with a welded header arrangement at each end of the lines. An orifice flange will be installed on each of the lines about 20 feet from each of the headers and there will be at least 1,000 feet of straight run pipe between the two orifice flanges. The measurements will conform with the results found by the experiments of the Natural Gas Association at Buffalo on straightening vanes.

The experiments on this field laboratory setting will give the following information:

(1) A comparison of the effect of different kinds of joints in the same size of lines.

(2) The relation between rate of flow and the diameter of the pipe.

(3) Accurate data on the frictional resistance due to changing the internal surface area exposed to the gas flow.

(4) Effect of changing the rate of flow and velocity in each size of the pipe.

(5) Accurate data, on a small scale, relative to the factors that influence the flow of natural gas in a pipe line.

Proposed Field Tests

The laboratory field tests really are only a preliminary to the main pipe line flow formula problem; and the results of these tests are intended as a basis for interpreting properly the results of field tests on operating lines.

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In the field tests, the principal data are taken at the orifice meter where the measurement of the quantity of gas is obtained. These data consist of the static pressure in pounds per square inch. The differential pressure in inches of water, and the temperature of the flowing gas.

The static pressure is obtained with a deadweight gauge. This instrument is more accurate for experimental pressure measurements than either a test gauge or recording gauge; the pressure measurements being correct to within a pressure of one-tenth pound per square inch.

In order to obtain an accurate record of the differential pressure, it was necessary to construct water manometers that not only had to be of sufficient size to record any differential pressure typical to operation, but had to withstand satisfactorily pressure as high as 400 pounds per square inch. Accordingly, double reading manometers, constructed with high pressure glass tubing connected with specially designed stuffing boxes, were made in the Bureau of Mines instrument shop. The manometers have a range of 56 inches of water.

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In the paper presented by Prof. Norris and H. G. R. Schneider Massachusetts Institute of Technol the cracking of normal and isohex aluminum chloride, it was state they checked the theoretical dedu from experimental work of treating sene with aluminum chloride of Dr tav Egloff, which work was perf 12 years ago, and in which he foun aluminum chloride treatment of also hydrogenated the products cracking the oil. Their checking data gave similar results to tho tained by Doctor Egloff and con them in every respect.

Objects of Division

An interesting social feature meeting of the division of pet chemistry was an informal dinne at the University Club, at whic objects and ambitions of the di were discussed. An astonishing addition to the membership wa nounced during the year. One ye membership numbered 250, where day the membership is 375.

On this occasion, it was point that probably every oil company United States would readily co-o in having representatives attend meetings at which petroleum che is discussed if the importance co understood and appreciated by t ministrative officers.

The fact that 20 papers were pre at the meeting this year, all of the ing evidence of painstaking resea

CHICAGO REFINED MARKET UNCHANGED

(Continued from Page 142)

yet and in the meanwhile there may be accumulations of gas oil or a change in the gasoline market might come that would start the cracking plants and reduce the supply of straightrun gas oil while increasing the quantity of cracked product. It is an interesting situation and one that will bear watching. From present indications, cracked gas oil will be the most largely sold fuel for domestic oil burners next fall and winter. The prevailing market for such a product today is 2¾ with the darker high flash oil suitable for industrial users, held generally for 2¾ cents. There seems to be very little distress oil offered and it is stated that many of the larger dealers have disposed of their surplus, and are not adding to their stocks right now.

Fuel Oil Situation

Fuel oil is in a rather peculiar position. The demand is just about as it has been for several weeks, in fact there has been much the same condition all through the season of larger demand. The users have held back their business, have bought the least expensive fuel oils and have done all that they could to depress prices. They are continuing their tactics and making the most of every occurrence that they can twist to have a bearing on the price of what they want to buy. Apparently they are getting some results for one large refiner that has talked the highest of prices came out with a quotation direct to the large consumers of 90 cents for their oil stated to be a full 16 gravity fuel oil. Other heavy oils are selling at 95 cents to $1 and 24-26 gravity fuel oil has been bought by dealers for resale at $1. The higher gravities seem all out of line. For a good 28-30 refinery oil with a fairly low cold test it has been necessary to pay as high as $1.20 a barrel and as a consequence dealers are substituting gas oil and telling users that if they will run it into their tanks it will reduce the heavier oils in that tank and make practically a clean tank. There are very few inquiries for any quantities of fuel oil. One of the steel companies asked for prices on about 100 cars over 90 days.

There is nothing new in the Smackover situation except that the tendency is towards lower quotations and lower prices of not over $1.15 have been established for that oil.

Lub Oils Active

The lubricating oil movement is more active on orders but there is only a moderate amount of new business being placed and to secure this, eastern and western refiners and consumers are meeting with very active competition from refiners in the central states. These are cutting under the Mid-Continent refiners around 2 cents on the pale oils. In some instances oils quoted at 11½ to 12 cents Group 3 are being delivered at Detroit in one instance at a price that figures 9 cents Group 3. The Standard Oil Co. of Indiana is an active seller of its lubricating oils. The consumption of motor oils is good, paralleling that of gasoline. The industrial demand is fairly active. Waxes are weak here and very freely offered.

Tank Wagon Market

There is nothing new in the tank wagon situation. The improvement in gallonage as compared with April of last year has been mentioned. Open price cutting is the exception rather than the rule. Still there is a great deal of the giving of concessions for the purpose of increasing sales, a plan which the independent dealers claim is approved by the major companies through their adoption of the Q. D. A. The major companies claim that this plan was forced on them by the persistant concession giving by the independent dealer. The cash customer who drives into the station usually pays the full price. Nearly everybody except that cash customer gets his for less. The general opinion now is that the present tank wagon scale will hold through the spring at least, some say until it is time to advance it. Those expecting an increase in prices later may find them as slow to advance as they have been to move downward.

SOUTHWEST WILDCATS

(Continued from Page 138)

NE cor., is rigging up. Houston Oil Co.'s No. 17 Cartwright, Cannon Survey, 1,500 feet southwest of No. 1 Riverbed, is drilling at 800 feet; No. 1 Dunning M. B. Kivlin Survey, has set casing at 2,053 feet. J. W. Walton's No. 1 Roberts, west of Three Rivers, at 1,740 feet has tested four sands all of which showed gas.

Medina County

Schermerhorn Oil Co.'s test on the John Degent Survey has derrick up. Witherspoon Oil Co.'s No. 2 Redus, Survey 92, has set casing at 910 feet; No. 1 Nixon, Survey 119, located 1,500 feet to east line and 1,500 feet to south line, is testing at 850 feet. R. P. O'Brien's No. 1 J. P. Nixon, Survey 531, is drilling at 755 feet with small show of gas at 640 feet. Fennell & Williams' No. 1 John, Fohn, Survey 115 is drilling at 1,102 feet. J. H. Gray and others No. 1 Louis Mann, Survey 16, located 350 feet to north line of farm and 350 feet west of river, is having a little trouble setting liner at 1,158 feet. Ina Oil Co.'s No. 2 Finger, Survey 746, Lot 2, located 300 feet south of No. 1, is drilling at 1,400 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center at 820 feet had flow of salt water and has set 15-inch casing to shut off water, now shut down to wait for cement to set. Johnstone & Hout's No. 1 Whipff, 9 miles from Eagle Pass, is lowering 8¼-inch casing at 1,210 feet. Ryeade Oil Corp.'s No. 1 Chittim is drilling at 5,580 feet (corrected depth). No. 2 Sullivan is drilling at 3,790 feet (corrected depth).

McMullen County

Nelson & Woods' No. 1 Shiner, Block 74, Survey 48, at 1,000 varas to east line and 350 varas to south line, is shut down at 783 feet for repairs. George Pickett's No. 1 Jacobs, Survey 7, located 660 feet to north line, is coring at 1,035 feet. George E. Pope's No. 4 Shiner, Survey 47, Block 46, has been abandoned at 1,550 feet with dry sand from 1,510-50 feet.

Nueces County

Pearson and others' No. 1 John Dunn, south side of Nueces Bay, is on gas sand at 2,363 feet; No. 1 Weil has derrick up, location west of Corpus Christi.

San Patricio County

F. S. Smiley has derrick up for No. 1 T. E. Wilson, one quarter of a mile northwest of Angelita and several miles south of Odem. W. L. Pearson and others' No. 4 Cage, Rachal Survey, is at 2,140 feet waiting for casing to set to make test; location has been made for No. 6 Cage in the Rachal Survey. Huber-Crawford's No. 1 Mathis, Delgavo Survey, Block 17, located 300 feet to northwest lines and 2,500 feet to southwest lines, is shut down at 1,400 feet. John Sigmund's No. 7 McCampbell has hole nearly cleaned out to the total depth of 4,021 feet and will then start making new hole.

San Saba County

Wilmot Oil Co.'s No. 1 Rocky Pastures, 9 miles northeast of San Saba, has been abandoned with tools lost in the hole; No. 2 Rocky Pastures has been spudded in 50 feet from No. 1 and is drilling at 900 feet.

Wilson County

Thomas and others' No. 1 August Haese, J. S. Moore Survey No. 124, at 300 feet to NE cor., is rebuilding derrick.

Zavala County

J. G. Pundt has derrick material ordered out for test on the West ranch.

MEXICO IS ESTIMATED TOO HIGH THIS YEAR

(Continued from Page 38)

wells ranged, initial head, from 25 to 1,000 bbls., with an average of say 350 bbls. The Isthmus can claim all but two, one of which was finished in Tabasco and one in Chiapas.

Tank Car Delieveries

Tank car deliveries in 1926 for domestic consumption at interior points showed a decline from the 1925 movement of 662,810 bbls. The approximate figures follow:

	Bbls.
From Tampico—	
Fuel oil (topped and crude)	8,640,897
Refined	803,575
Total	9,444,472
From Minatitlan—	
Fuel oil and refined	59,400
Grand total	9,503,872

The above figures do not include casegoods nor drums, as figures for this class of interior deliveries are not available.

In Storage

Oil in steel storage in Mexican fields, refineries and terminals at the end of 1926 was as follows: Heavy crude, 6,171,553 bbls.; light crude, 2,361,383 bbls.; topped crudes (fuel oil), 5,207,040 bbls.; refined oils, 1,204,861 bbls.; total, 14,944,837 bbls.. The volume of steel storage, as indicated above, on January 1, 1926, was 20,173,248 bbls. Decrease December 31, 1926, 5,228,411 bbls.

In Conclusion

A Cassandra might foretell just what 1927 will bring about in the oil industry in Mexico, but a Cassandra would be treading on dangerous ground. Operators, both large and small, continue to complain of permits long delayed, or of a lack of them altogether. There is one thing only that can steady the industry from the viewpoint of production—which is petroleum's only potent viewpoint—and that is a broad and comprehensive wildcatting campaign for new pools; and such a campaign is not in sight. So far as the present year is concerned, even should such a campaign be inaugurated almost immediately it is hardly possible, under the law of averages, that new production in any volume from distinctive new pools could be secured, and transport completed to tidewater, in time to affect materially the present year. There is always the element of luck in the exploration for the elusive "black gold," that is true; but luck is as fickle in a prospective oil field as is the Great God Pan.

Some authorities consider that Mexico will produce 70,000,000 bbls. the present year. With full knowledge that this is written after their estimates have been made, which is a credit to them, it might not be amiss at this time to say that from 60,000,000 to 65,000,000 bbls. is the more conservative figure.

GAS FLOW THROUGH HIGH-PRESSURE LINES

(Continued from Page 40)

The various pipe line flow formulas that have been developed and used for calculating pipe line flows are as follows:

General formula:

$$Q = C \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{LG}}$$

which gives the relation between the quantity of gas Q and the various factors that have been considered to influence the flow of gas.

Cox formula:

$$Q = 3000 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}} \qquad G = 65$$

Rix formula:

$$Q = 2680 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{LG}}$$

Towl formula:

$$Q = 50 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}}$$

Pittsburgh formula:

$$Q = 3450 \sqrt{\frac{(P_1^2 - P_2^2)\, D^5}{L}}$$

When transferred to the general formula, the constants for these four formulas are:

Cox—2419
Rix—2680
Towl—2782
Pittsburgh—2672

which is a total variation of over 10 per cent in the coefficient.

Oliphant's formula:

$$Q = 42a \sqrt{\frac{P_1^2 - P_2^2}{L}} \qquad G = 0.6$$

$$A = \sqrt{\frac{D^2 + D^2}{30}} \qquad L = \text{Miles}$$

$$T = 60°$$

Unwins and Weymouth's formulas have been given.

Spitzglas:

$$Q = 64.3 \left(\frac{PAd^5}{SL\left(1 + \frac{3.6}{d} + 0.03d\right)} \right)^{\frac{1}{2}}$$

Q = Standard cu. ft. per hour.
A = mean pressure.
d = internal diameter.
S = density.
L = length in miles.

Comparison of Results From Formulas

A few results from calculating pipe line flows with the pipe line flow formulas, assuming certain operating conditions have been selected at random and are shown below:

Conditions					Discharge—M cu. ft. per 24 hours.						
Diam. Ins.	Length Miles	P	P	G	Oliphant	Weymouth	Cox	Rix	Towl	Pittsburgh	Spitzglass
2	15	400	200	.6	547	516	535	596	617	591	447
2	10	200	100	.6	343	328	341	380	396	376	285
8	70	210	41	.6	4992	5328	4428	4913	5112	4896	
8	20	214	40	.6	9418		8808	9761	10130	8932	

Scope of the Study

As explained, the purpose of the study of gas flow through pipe lines is to obtain information for design of the lines and the capacity effects to be expected under different operating conditions. The results that are desired and which should be obtained by completing the study are as follows:

(1) Establishing a dependable formula, or formulas, for calculating the flow through pipe lines of different sizes under various operating conditions.

(2) Determining the effect of frictional resistance on pipe line flow; both skin friction due to the contact with the surface of the pipe and internal molecular friction, or viscosity, due to the friction between the gas molecules themselves.

(3) Determining, from practical studies during field operation, the relation between pressure-drop per unit length of line and quantity flowing, increase or decrease of velocity and other flow characteristics that will affect the quantity results.

(4) Results from conducting a pressure variation study throughout the length of representative lines that are tested, taking into special consideration the effect of each kind of fitting and expressing the results in equivalent lengths of line. At present, the plan is to use an orifice for a basis in the same manner that a right angle elbow is used in oil transportation flow.

(5) Determining a relation between the total resistance to gas flow and diameter of the pipe.

(6) Determining the maximum variation in flow due to the different conditions of the internal surface of the pipe, or in other words the maximum variation in flow due to a maximum change, typical to operating transmission lines, of the skin friction of each size pipe.

(7) Determining the effects, if any, of the chemical composition of each kind of gas transported, the water content, the gasoline content, and various other physical conditions of natural gas that are not typical of theoretical considerations.

(8) Determining the effect of the compressibility of gas, or deviation from Boyle's law, as it relates to the theoretical considerations and the pressure-drop per unit length of line in practical operation.

(9) Obtaining data from a few lines which can be used for measurements over rather a long period of time, at least a year so as to get seasonal changes, and certain pressure changes, and on which

lines the metering equipment will be kept in good order.

(10) Determining the capacity or build-up effects in any pipe line on the measurement by considering "feed-in" to the line at different connections and also the actual volume and pressure changes in the line due to fluctuating demand conditions.

(11) Obtaining data from experimental work which is planned so that a sufficient number of pipe lines can be selected and a wide range of operating conditions included to make the result applicable to any operating conditions.

It will be necessary to investigate carefully the last 10 of the above items before any conclusive conclusions can be offered that will change the existing pipe line flow formulas. At the present stage of the work it is not known that a new formula will be developed. Instead, actual data are to be taken from field tests on transmission lines under various operating conditions, and the results of quantity measurements as obtained in these tests will be compared with quantities as obtained by solving existing pipe line flow formulas.

Physical Properties

One of the factors that has caused much discussion in pipe line flow formulas is the difference in various physical properties of different natural gases. These physical properties that affect the flow of gas are the actual chemical composition of the gas, the compressibility or deviation from Boyle's law, the gravity, and possibly the viscosity. Accordingly, as a preliminary study to the pipe line flow formula problem, as many samples of different natural gases as possible have been collected and a determination of the physical properties of each gas has been attempted as follows:

(1) The chemical compositions have been obtained by accurate analyses in the chemical laboratory of the helium division of the United States Bureau of Mines at Forth Worth, Tex.

(2) The compressibility at definite pressures have been obtained with a specially designed apparatus employing the principle of water displacement. The gas, under the desired pressure is expanded from a small container of known volume to atmospheric pressure. The expansion is made through a large container filled with water, the water being displaced and measured as the gas is expanded from a high pressure and comparatively small volume to atmospheric pressure and the resulting volume. A comparison of the theoretical expansion that should apply to a perfect gas and the expansion that actually is measured then is made after correcting the experimental results for vapor pressure, temperature, and other influencing factors. A series of curves representing the relation between pressure and the deviation factor have been made for several samples of natural gas.

(3) The gravities of the gases have been obtained with the improved type Bureau of Mines gravity balance.

(4) The total frictional resistance factors, which simply compare the frictional resistance as offered to gas flow compared to the resistance offered to air flow, have been obtained by discharging gas and air respectively through 150 feet of ⅛-inch copper tubing, coiled and placed in a water bath to maintain constant temperature conditions, and comparing the rates of flow. No attempt yet has been made to separate the actual skin friction and the internal molecular frictional effects.

As the work progresses on field tests of natural gas transmission lines, it is planned to obtain a representative sample of each gas that flows through the pipe line that is used for the experimental work, and determine each of these four main physical properties.

Field Laboratory Experiments

In any research problems where several variable factors influence the results that are obtained, it is desirable to have as many of the factors under control as possible. The ideal condition for experimentation is to control all of the factors with a single exception of one variable during the performance of an individual experiment. Field tests on operating pipe lines to obtain data for pipe line flow formula calculations involve such variable factors as quantities, pressures, velocities, build-up conditions, temperatures, conditions of internal surfaces of different pipe lines, changes in the physical characteristics of the gas, and other factors that have a decided influence on the measurements and which without a good knowledge of their probable actions could not be accounted for very accurately. As a result, it has been decided by the Transportation Committee that a series of field laboratory experiments, where the different factors could be controlled, are desirable in order to interpret properly the results of field tests on transmission lines.

The plans for the field laboratory tests are to construct different sizes of short pipe lines, at least 1,000 feet long, in the Chickasha gas field and use them for special flow tests. Three types of construction will be used, and the following sizes of lines will be built:

(1) For screwed line construction, the diameters will be 2, 3 and 6 inches.

(2) For rubber coupled line construction, the diameters will be 2, 3, 4, 6 and 8 inches.

(3) For welded line construction, the diameters will be 3 and 6 inches.

Each set of lines for each kind of construction will be built as a manifold unit, with a welded header arrangement at each end of the lines. An orifice flange will be installed on each of the lines about 20 feet from each of the headers and there will be at least 1,000 feet of straight run pipe between the two orifice flanges. The measurements will conform with the results found by the experiments of the Natural Gas Association at Buffalo on straightening vanes.

The experiments on this field laboratory setting will give the following information:

(1) A comparison of the effect of different kinds of joints in the same size of lines.

(2) The relation between rate of flow and the diameter of the pipe.

(3) Accurate data on the frictional resistance due to changing the internal surface area exposed to the gas flow.

(4) Effect of changing the rate of flow and velocity in each size of the pipe.

(5) Accurate data, on a small scale, relative to the factors that influence the flow of natural gas in a pipe line.

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The Bureau of Mines appreciates the friendly and co-operative spirit of the association in this work and hopes that the results will benefit the industry.

DISCUSS POSSIBILITIES OF PETROLEUM PRODUCTS

(Continued from Page 39)

the specific sulphur hydrocarbons present in the different oils, as such, so that the problem can be attacked in a broad way on the basis of principles rather than empirical methods.

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In the case of the paper of Youtz and Perkins of the Standard Oil Co. of Indiana on the determination of sulphur and sulphur derivatives of hydrocarbons in petroleum distillates, important information was given on the action of chemicals on pure sulphur compound.

Morrell and Faragher's paper on the role of lead sulphide in the sweetening of petroleum products indicated that oxygen was necessary during the sweetening action. There was considerable discussion on this paper, in which it was held that oxygen or air were not necessary for sweetening reaction in the presence of lead sulphide.

A statement by Kleinberg in Industrial Engineering and Chemistry was referred to, in which Doctor Kleinberg, a chemist of the Standard Oil Co. of California, stated that sulphur in California oils was kept down materially, and also the polymerization losses by cooling sulphuric acid and distillate oil to a temperature from 10 to 20 degrees Fahrenheit. There was, he stated, materially less polymerization solubility losses in the sulphuric acid when cooling reaction mixtures were brought to low temperatures. He stated that the Standard Oil Co. of California was putting up a commercial plant to carry out this process. This statement was received as having an important bearing upon the subject referred to.

In the paper presented by Prof. J. F. Norris and H. G. R. Schneider of the Massachusetts Institute of Technology on the cracking of normal and isohexane by aluminum chloride, it was stated that they checked the theoretical deductions from experimental work of treating kerosene with aluminum chloride of Dr. Gustav Egloff, which work was performed 12 years ago, and in which he found that aluminum chloride treatment of oils also hydrogenated the products while cracking the oil. Their checking of this data gave similar results to those obtained by Doctor Egloff and confirmed them in every respect.

Objects of Division

An interesting social feature of the meeting of the division of petroleum chemistry was an informal dinner held at the University Club, at which the objects and ambitions of the division were discussed. An astonishingly large addition to the membership was announced during the year. One year the membership numbered 250, whereas today the membership is 375.

On this occasion, it was pointed out that probably every oil company in the United States would readily co-operate in having representatives attend these meetings at which petroleum chemistry is discussed if the importance could be understood and appreciated by the administrative officers.

The fact that 20 papers were presented at the meeting this year, all of them giving evidence of painstaking research in

the realm of petroleum chemistry, was regarded as significant, as was the fact that members showed their readiness to co-operate in promoting the interests of the division by devoting time necessary for much work that has been done.

Confidence was expressed that at the next divisional meeting, to be held in Detroit in September, an effort will be made to have a joint session of the division of petroleum chemistry with the division of gas and fuel chemistry, especially for the consideration of the subject of emulsions of motor fuel, which is common to the interests of both divisions. It was believed quite likely that this will lead to joint meetings of these two divisions, wherever they are assembled, so that subjects in which both are interested may be considered jointly, separate meetings of the divisions following these joint meetings.

The work of the division of petroleum and chemistry at this meeting, in relation to the sulphur problem, is one that cannot fail to excite the interest of every refiner, because of the corrosion problem, it was stated. After it has been possible to discover the shape in which sulphur exists, it is believed, the cost of refining will be reduced, and the product improved as a natural consequence of these investigations. The fact was pointed out as of especial interest that such improved methods will be free to everyone in the oil industry, and will not belong to any one refiner or group of refiners.

The increasing interest shown by the division of petroleum chemistry was equally prominent at the meeting of the division of gas and fuel chemistry, and it was freely predicted, in behalf of both of these divisions, that the meeting to be held in Detroit in September probably will break all previous records in the importance of papers to be presented, and in the interest that members attach to them.

NEW ORLEANS PETROLEUM PORT

As the oil traffic by water is increasing out of New Orleans, the city is investigating the advisability of an exclusive harbor for this use such as those of Hamburg, Germany; Constanta, Rumania; Bordeaux, France, and Amsterdam, Holland.

PETROLEUM SECURITIES IRREGULAR DURING WEEK

(Continued from Page 147)

is equivalent to $10.75 a share (par $50) earned on the average number of common shares outstanding during the year, and to $9.32 a share on 3,355,514 shares outstanding at the end of the year.

The consolidated income account for 1926 compares with 1925 as follows:

	1926	1925
Profits	$46,911,989	$41,973,196
Interest, etc.	476,569	79,220
Deprec. & depletion	11,825,434	10,053,519
Fed. taxes, etc	4,600,000	4,000,000
Minor. int. proportion	483,636	504,463
Profit	$29,526,350	$27,335,994
*Profit of Lago Oil	2,060,616	.....
Balance	$31,586,966	$27,335,994
†Deduction	306,959	.....
Net profit	$31,280,007	$27,335,994
Dividend	17,456,875	16,477,043
Surplus	$13,823,132	$10,858,951
Prev. surplus	15,358,480	11,832,604
Total surplus	$29,181,612	$22,691,555
Adjustments, etc.	924,688	‡7,333,075
P. & L. Surplus	$28,256,924	$15,358,480

*See paragraph above. Inter-company profit excluded from Lago inventories. ‡Adjustments resulting from sales of stocks of owned companies, premiums received on sale of Pan American Petroleum & Transport stock, etc.

The consolidated balance sheet of the Pan American Petroleum & Transport Co. and owned and controlled companies, as of December 31, 1926, compares with 1925 as follows:

Assets	1926	1925
Steamships, leaseholds, etc.	*$112,820,256	$110,180,872
Investments	†81,849,860	20,122,502
Accts. receivable	11,536,181	11,303,374
Cash with trustee	606,846	984,813
Mex. govt. deposit	1,500,000	1,500,000
Marketable securities	6,232,562	.....
U. S. receivable	599,269	.....
Cash	20,300,815	21,953,685
Inventories	21,051,107	20,240,734
Deferred charges	1,897,728	2,234,246
Total	$257,795,355	$189,119,435
Liabilities		
‡Common stock	$ 50,077,950	$ 50,077,950
‡Common "B" Stock	117,697,750	87,738,100
Stock contr. cos.	1,281,857	1,332,369
Bond & mortg. debt	15,196,040	16,783,000
Accounts payable	7,084,005	4,876,353
Notes payable	7,300	857,300
Dividends payable	5,058,618	4,163,760
Fed. tax prov., etc.	8,695,877	6,710,319
§Capital surplus	23,005,277	.....
Minor. int. surplus	1,433,757	1,221,804
Surplus	28,256,924	15,358,480
Total	$257,795,355	$189,119,435

*After reserve for depreciation and depletion.

†Includes $68,902,920 investment in Lago Oil & Transport Co. stock and investment of $11,025,000 in Pan American Western Petroleum Co. 6 per cent notes.

‡Par value $50.

§Representing excess of book value at dates of acquisition over cost of Lago stock.

Panhandle Producing & Refining

The report of the Panhandle Producing & Refining Co. for the year ended December 31, 1926, shows net profit, including $457,883 profit on property sold and retired, of $325,154 after interest, taxes, depreciation, depletion, amortization, etc., equivalent to $11.58 a share earned on the outstanding 28,077 shares of 8 per cent cumulative preferred stock, on which no dividends have been paid since July, 1923. This compares with net loss of $188,520 in 1925.

Sinclair Consolidated Oil

The report of the Sinclair Consolidated Oil Corp. for the year ended December 31, 1926, shows net income after deducting reserve for depreciation, depletion, amortization, interest, taxes, etc., of $17,648,032, equivalent after preferred dividends to $3.60 a share earned on 4,509,480 shares of no par value common stock. This compares with $6,002,793, or $1.01 a share on 4,499,162 common shares outstanding in 1925.

The consolidated income account for the year 1926 compares with 1925 as follows:

	1926	1925
Gross earnings	$191,737,701	$159,544,216
Expenses mainten., taxes, etc.	148,798,192	130,599,569
Net earnings	$42,939,509	$28,944,647
Int'st, discount, etc.	7,722,622	7,731,734
Balance	$35,216,887	$21,212,913
Deprec'tion, dpl., etc.	17,568,855	15,210,120
Net income	$17,648,032	$6,002,793
Preferred dividends	1,408,742	1,455,474
Surplus	$16,239,290	$4,547,319

The consolidated balance sheet of the Sinclair Consolidated Oil Corp. and subsidiaries as of December 31, 1926, compares as follows:

Assets	1926	1925
Real estate, oil & gas leases, pipe lines, etc.	*$242,259,418	*$231,089,979
Investments	60,855,058	60,163,788
Special funds	2,376,285	1,601,203
Cash	5,726,437	5,798,936
Accts. & notes received	14,414,634	13,381,152
Empl. stock subscription	438,187	508,700
Inventories	29,806,546	27,635,606
Advances, etc.	167,832	471,647
Marketable securities	2,016,024	3,450,180
Deferred charges	6,757,811	7,811,568
Total	$364,817,232	$351,912,759
Liabilities		
Common stock	†$204,414,529	$204,197,841
Surplus	28,927,232	15,423,645
Preferred stock	17,210,000	17,852,200
Minority int. in subs	109,790	109,790
Ins. & misc. reserve	6,277,471	2,769,821
Funded debt	85,756,600	90,954,499
Purch. money oblig.	2,303,184	1,975,428
Notes payable	2,000,000	2,000,000
Accounts payable	14,965,969	14,223,544
Accruals, etc.	2,852,457	2,405,991
Total	$364,817,232	$351,912,759

*After reserve for depreciation, depletion and amortization amounting to $111,938,149 in 1926 and $96,052,505 in 1925.

†Represented by 4,509,480 no par value shares.

New Bradford Oil Co.

The balance sheet of the New Bradford Oil Co. as of December 31, 1926, shows that during the year it increased its holdings of stock in the Mountain & Gulf Oil Co., so that at the end of 1926 it had 52.7 per cent of the stock of that company. The dividend of the Salt Creek Consolidated Oil Co., 52 per cent owned by the New Bradford Co., was increased July 1, 1926, so that half of the year dividends were paid at the rate of 80 cents per share.

Current assets of the New Bradford Oil Co. were $181,660.58; current liabilities, $2,302.21; deferred assets, $343.77; investments, $7,627,930.55; capital stock outstanding, $5,323,686.40; surplus, $2,483,946.29.

Salt Creek Consolidated Oil Co.'s current assets were: $1,184,964.28; current liabilities, $316,474.05; deferred assets, $55,028.60; contracts payable, $156,624.67; permanent assets: Oil lands and leases, less reserve for depletion, field investment and equipment and less reserve for depreciation, $15,791,628.31; capital stock outstanding, $12,863,000; surplus, $3,572,340.66; reserve for taxes and contingencies, $123,181.81.

Current assets of the Mountain & Gulf Oil Co were: $2,725,579.04; current liabilities, $153,402.94; deferred assets, $263,963.73; deferred liabilities, $190,780.81; permanent assets: Oil lands & leases, less reserve for depletion; field investment and equipment, less reserve for depletion and development, $7,302,139.97; reserves, for taxes, $110,776.95; minority interests, $2,428.98; capital stock outstanding, $3,705,200; surplus, $7,018,341.06; less dividends paid, $889,248.

Phillips Statement

The statement of Phillips Petroleum Co. shows that for the first three months of 1927, the company earned $6,804,719 before depreciation, depletion, or inventories, as against earnings of $6,121,264 for the first quarter of 1926.

SEMINOLE GASOLINE 300,000 GALLONS DAILY

(Continued from Page 152)

operated over a longer period. With the experience gained in their present operation it is apparent the production is only about 75 per cent of their capacity.

Sinclair Largest

The Sinclair Oil & Gas Co. is the largest producer of natural gasoline in the field at present, its one plant making 83,000 gallons daily. The addition of four more units will increase its production about 20,000 gallons within the next two weeks. The Empire Gasoline Co. is building a new plant on its Lacey lease in 14-8-6e, which is expected to

CHEMISTS ATTENDING THE SEVENTY-THIRD MEETING OF THE

make 60,000 gallons and will more than double its present capacity and production.

The Amerada Petroleum Corp. is putting in a plant in Section 15-8-6 which will be in operation by the first of next month. It will have a capacity of 15,000 gallons, which will increase the Amerada's capacity and production about 60 per cent. The Victor Gasoline Co., which is building its first plant in the Seminole in 10-9-6, will contain 4 units and will have a capacity of approximately 16,000 gallons. The Independent Oil & Gas Co. has been adding lines and auxiliary equipment to its plant in 26-9-6 and the production will be thus increased 10,000 gallons. Other companies contemplate additions to their present plants and some companies not operating plants in the field have investigated the building of plants there. As more wells are completed the gas supply will be increased. This will mean that the present plants will be enlarged or the new plants constructed.

PRESENT PRODUCTION AND CAPACITIES OF NATURAL GASOLINE PLANTS NOW OPERATING IN THE SEMINOLE DISTRICT

Company—Location:	Estimated Daily Gasoline Capacity Gallons	Present Daily Gasoline Prod. Gallons
Sinclair Oil & Gas Co.—Cudjo lease, Section 35	100,000	83,000
Cudjo booster station	10,000	10,000
Walker booster station	10,000	10,000
Empire Gasoline Co.—James lease, Section 24-9-6e	30,000	30,000
Wilson lease, Section 24-9-6e	20,000	20,000
Carter Oil Co.—Stewart lease, Section 34-10-6	40,000	25,000
Cudjo lease, Section 35	12,000	6,000
Grisso lease, Section 15-9-6	60,000	35,000
Gypsy Oil Co.—School land, Section 16-9-5e	37,000	24,000
Amerada Petroleum Corp.—Killingsworth lease, Section 23-9-6	5,000	5,000
School land, Section 16-9-5	20,000	16,000
Pure Oil Co.—Section 26-9-6	20,000	20,000
Independent Oil & Gas Co.—Tolof-Fixico lease, Section 26-9-6	30,000	20,000
Total	394,000	304,000

A. O. M. A. HEARS TRADE TOPICS AT MEETING

(Continued from Page 40)

their subjects included; "Arbitration of Disputes Between Refiners, Jobbers and Marketers," by C. O. Beroth, president of the Acme Petroleum Co.; "Outage Tables and Calculations," by J. A. Stumpf of the Henry H. Cross Co.; "Standardization of Specifications on Domestic Furnace Oils," by L. A. Stewart, vice president Atlas Petroleum Co.

Talks With Employes

In addition to these talks the paper of W. J. Gerwe on "Modern Merchandising at the Filling Station," crowded out at the previous day's meeting, was read by Mr. Gerwe. The subject matter of his address was very similar to that of his associate with the Vacuum Oil Co., C. B. White, but his treatment was almost entirely devoted to the best method of securing the best results from station employes. He advocated very strongly the most complete education possible of the employe regarding all parts of the business so that each might understand for example that when he turned over to the cashier of the company $100 of the receipts that it was not all profit and that in fact so little part of the sum was a profit that it was a very easy matter for the station to prove a liability rather than an asset. He said that the best way to secure intelligent and efficient co-operation from an employe was to be a good example, to talk over matters with him, not at him, and to make it worth the while of that employe. He instanced one station attendant who was shown the costs of operation and given the daily gallonage that was needed to make the station pay. For several days he did a business that showed a loss. Then he came into the office to try and find out why the station was not a profit maker. Several things were tried and finally the station became a profit maker. This was a great satisfaction to the manager of that station and he also received a substantial increase in his pay as his share of the profits. As Mr. Gerwe said, he could talk on his experiences indefinitely. He said that the Vacuum Oil Co. was an independent organization because the management believed after a very careful survey that the bulk of the gasoline and oils supplied to the public would be sold by properly managed independent companies and they were trying to do all they could to help to supply the information needed for this kind of management. One thing that he stressed particularly was the fact that more and more women were driving cars and that it would pay to cater to the women drivers. One suggestion was that the station salesmen sort out the clean money that they took in and when making change for a woman driver always give her clean money. He said that recently he saw a station salesman give a lady filthy money in change. She took it with the tips of her fingers and dropped it on the seat beside her.

Arbitration of Disputes

The suggestion by Carl Beroth in his address on "Arbitration of Disputes" for the appointment of official inspectors was well received and on the motion of A. J. Callaghan of the American Oil Corp. of Jackson, Mich., the directors were instructed to take up the plan with the Western Petroleum Refiners Association and see if something could not be worked out. Another suggestion by Arthur Anson of the Altitude Petroleum Corp., was that the association appoint someone to take samples under correct conditions and have them analyzed by some standard laboratory. His idea was that this could be done at once and that if the samples were taken under proper conditions any refiner, marketer or jobber would accept the report of the chemist making the analysis. It was stated by Mr. Beroth that a gauge was about to be placed on the market which would take samples from the top, middle and bottom of any car, each receptacle being equipped with a thermometer so that the temperature of the sample at the time it was taken from the car could be quickly and easily determined and made a matter of record.

J. A. Stumpf of the Henry H. Cross Co. explained the use of the outage tables and the best way to gauge the contents of a tank car, a sample of a problem being furnished to each one present. In connection with his talk the question was raised as to the allowance of freight on products not received because of improper loading conditions. It was stated that a number of cars were loaded, presumably full of a product which had a temperature of 120 degrees, when the outside temperature at time of loading was 40 degrees. The result was that the buyer paid freight on merchandise that was not received and it was claimed the refiner should repay the freight. Several stated they had had a similar experience but had not been able to collect the freight which they had paid for a full car.

L. A. Stewart in his talk on the "Standardization of Furnace Oils" told of the difficulties experienced in an effort to secure such standardization and expressed his opinion that the marketer and distributor today did not know what quality of furnace oils they would have to sell next winter. Furnace oil was still a by-product. The best that could be done was to encourage every effort towards greater uniformity.

The first address was that on "Organization and Co-operation," by Phil Grau of Milwaukee, on the necessity for and advantages of such organizations as the American Oil Men. Mr. Grau paid special attention to the necessity for more co-operation with the increase in competition, but also under the conditions brought about by such inventions as the telephone, the telegraph and improved means of transportation. Men in any line of occupation should not only belong, but take an active part in their trade organization.

The chair suggested that there were so many oil jobbers present from all parts of the country it seemed it would be a good time for a general discussion of some of the live topics with distributors, such as the Q. D. A., the competition from the integrated companies and whether now was a good time to buy gasoline.

A director from Ohio stated that in all the meetings the subjects discussed seemed to him to be those that arose in the Standard of Indiana territory, and the problems of dealers in the other parts of the country received little attention. In Ohio they did not have a Q. D. A., but they had an own brother to it which was just as bad. For his part, his mind had changed regarding markets until now he had little or no respect for posted prices, as they did not mean anything.

Another speaker along this line was A. S. Close of the Hickock Producing Co. of Toledo, Ohio, who stated that his company had been able not only to hold but increase its gallonage, and had never cut a price, selling at the full scale, but giving the best of gasoline and service. The secretary of one state association said he had found it impossible to fully comprehend the Q. D. A., and he doubted if its originators did, at least their actions were sufficiently contradictory to suggest they did not.

The dinner given by the officers of the association Tuesday evening to the presidents and secretaries of state organizations gave opportunity for discussion between the officers of the national and state associations of the possibilities of co-operative action between the various bodies for the good of the industry. Good results are expected to follow the better understanding brought about by this meeting of the active managers.

Election of Officers

The election of officers resulted in the choice of A. S. Close of the Hickock Producing Co., jobbers, of Toledo, Ohio, as president in place of J. P. Howe of the Manhattan Oil Co. of Kansas City, who declined an election. G. I. Sweney of the Sweney Gasoline & Oil Co. of Peoria,

ERICAN CHEMICAL SOCIETY, RICHMOND, VA., APRIL 11 TO 16

Ill., was re-elected first vice president; J. J. Theisen of the Theisen-Clemens Oil Co. of St. Joseph, Mich., second vice president; R. E. McDowell of the Black Hawk Oil Co., Waterloo, Iowa, third vice president. H. T. Bayard, Ennis-Bayard Co., and James A. Gilmore were re-elected treasurer and secretary. The following directors were chosen: Homer Johnson, Johnson Oil & Refining Co., Chicago; E. E. Grant, Lake County Oil Co., Chicago; D. E. Buchanan, Chestnut & Smith Corp., Tu'sa, Okla.; Richard C. Heil, Commercial Oil Co., Cleveland, Ohio; G. T. Wofford, Wofford Oil Co., Birmingham, Ala.; W. H. Barber, W. H. Barber & Co., St. Paul, Minn.; J. J. Theisen, Theisen-Clemens Oil Co., St. Joseph, Mich.; Sheldon Clark, Sinclair Refining Co., Chicago; John M. Carson, Atlas Petroleum Co., Chicago; C. A. Gustafson, C. A. Gustafson Co., Chicago; A. T. Locke, Locke's Gasoline Co., Chicago; E. D. Richardson, Richardson Lubricating Co., Quincy, Ill.; G. I. Sweney, Sweney Gasoline & Oil Co., Peoria, Ill.; J. P. Howe, Manhattan Oil Co., Kansas City, Mo., all re-elected. New directors elected were: P. M. Miskell, Empire Refineries, Inc., Tulsa, Okla.; C. O. Beroth, Acme Petroleum Co., Chicago; A. F. Garrett, Tidal Refining Co., Tulsa, Okla.; W. D. Cross, Jr., Eastern Independent Oil & Supply Co.; D. W. Moffitt, Mid-Continent Petroleum Corp., Tulsa, Okla.; E. R. Kennedy, Kennedy Oil Co., Galesburg, Ill.; J. B. Gafill, Gafill Oil Co., South Bend, Ind.; J. W. McGuire, Galena Signal Oil Co., New York City.

Two places were left to be filled by the choice of the committee of exhibitors. It was announced that at the request of the exhibitors the American Oil Men's Association will hold a fall convention with exhibits, location to be announced later.

"Building for the Future" was the title of a most interesting address made by C. B. White of the Vacuum Oil Co.

"Problems of Motor Car Lubrication" was the subject of a valuable paper read by R. B. White of the Valvo'ine Oil Co.

WEATHER SLOWS UP GASOLINE DEMAND

(Continued from Page 36)

stances are now getting ready to resume their cracking operations. Others are storing their output and will run it to their stills later. At least one large refiner in the Mid-Continent refused to sell gas oil when the price dropped to 3 cents. Another stopped at 2¾ cents. In both cases the refiners had shut down part of their cracking equipment and until the price got too low, had sold its gas oil output.

Most cracking units with 2½ to 3-cent gas oil charging stock can produce gasoline as cheaply as it now can be obtained from crude in the skimming operation at present prices. It is also attractive from the storage angle. The investment in gas oil storage at present is less than with crude, with no evaporation loss and a minimum fire hazard.

The same situation is expected to prevent a complete collapse in the fuel oil market. Fuel oil is charged direct to many cracking stills in the Mid-Continent and others are equipped to handle it in that manner if they see fit. Many plants have pipe still reducing units so that they can reduce the fuel oil to secure a large cut of gas oil, suitable for cracking units.

This manufacturing condition, it is pointed out, will make itself felt in the fuel oil market as it has in the case of gas oil, should prices go much lower than they are at present. Predictions of 70 or 75-cent fuel oil in the Mid-Continent are heard but those of an opposite opinion point out this cracking condition together with the coal strike as factors will prevent these low prices materializing.

Gasolines and Naphthas

Without an improvement in the volume of gasoline moved during the week, compared to that of last week, the price of 6¼ to 6½ cents on 58-60 U. S. Motor gasoline continued to hold. At times temporary strength was shown as inquiries were received on larger amounts but the consistently slow movement made these periods of strengthening of short duration. A few sales were reported at prices lower than 6¼ cents.

The market on the lower endpoint gasolines was weaker and the trading reflected the bad weather as this grade is usually sold as a specialty and is bought by jobbers as required without holding more than an operating margin of stocks. The greater volume of this gasoline produced, influenced by the comparatively favorable past market on these grades has also softened the price somewhat.

The higher gravity gasolines were being quoted at the same price, reflecting the continued low price on natural gasoline. The only large order reported was for 1,500,000 gallons of 64-66 375 at 7 cents. This business was placed by an exporter with one company. No change was made in the naphtha price as might be expected, with the gasoline and natural gasoline markets remaining the same.

Kerosenes and Distillates

The market continued dull on both kerosene and distillates but there was no important recession in prices. The so-called "spring kerosene season," so far as refinery purchases are concerned, is over. Distributors generally have sufficient quantities in storage at their bulk stations to take care of excess demand. This means that kerosene orders in the Mid-Continent unless export business develops will be confined to routine shipments until the fall season starts.

Fuel Oil and Gas Oil

The further weakening of the gas oil and fuel oil market was reflected in lower prices. Gas oil generally was quoted at 2⅝ cents but a relatively large volume was taken out of the territory at 2½ cents.

The fuel oil market showed a general decline. Some 14 gravity oil was sold as low as 90 cents. The weak gas oil market has allowed the refiners to offer the higher gravity fuels at price differentials between grades much less than ordinarily observed. Along with this practice of making or blending to make higher gravity fuels, the volume was increased. The low prices are encouraging the industrial users to keep their storage full, and some s rength may be given the fuel market later as the effects of the coal strike are felt.

Natural Gasolines

Nothing of sufficient importance happened over the past week to change the natural gasoline market. Some movements of 25 and 30-car orders were reported, but there were no purchases of a large volume as characterized the market two weeks ago. With the Seminole Field producing more than 40 cars of natural gasoline daily, and other units being built there, the continued high rate of production does not offer encouragement for higher prices in Oklahoma.

Lubs and Wax

The manufacturing costs of lubs and wax is such a large share of the price that a weakening of the general market is not reflected in their prices; and because of this, their prices have experienced only minor changes. Cylinder stock is in demand, and it is scare, as some of the refiners have discontinued running the stock producing crudes and are now running Seminole crude.

NORTH TEXAS GASOLINE FIRM; FUEL OIL WEAK

By James H. Dameron

FORT WORTH, Tex., Apr. 18.—U. S. Motor grade gasoline in the North Texas market was firm during the week While that grade of gasoline strengthened fuel oils weakened and dropped in price, and little change was noted in the condition of other products.

The better tone in gasoline is traced to the fact that so many refiners in the Wichita Falls district have shut down their cracking plants. In fact all but one refiner have shut down cracking plants and that plant is on reduced runs.

While that contributed to strengthening gasoline, at the same time it had its effect in weakening fuels. The Standard Oil Co. of Ohio 2-cent cut in gasoline in its territory, effective April 20, is having a disturbing effect, but not serious to Wichita Falls refiners.

Movement of gasoline has been fairly steady in the district throughout the week, although no noticeable increase in inquiries has been noticed. While it was generally conceded the Navy market was 6¼ to 6½ cents. some refiners in Wichita Falls were of the opinion the bottom would be 6¾. A rumor that a buyer was in the market for a fair-sized order for 64-66 375 gave hopes to the strengthening of that product which is hovering around 7 cents flat. Some distress 68-70 went at 7 cents during the week.

Natural gasoline failed to strengthen and, if anything, slumped off more. There was little differential in the prices of Grades AA and A, nor was there any differential in the price of Double B, Single B and C. Inquiries for the product are light. Kerosene remained unchanged. Fuel oil dropped 15 cents a barrel during the week and is still a hard product to find an outlet for. Fuel oil's weakness is traced to the fact that in strengthening gasoline by cutting down production fuel oil was weakened with increased production. Gas oil and distillate remained unchanged.

BOGGY CREEK AREA IN FOR SLOW DEVELOPMENT

CORSICANA, Tex., Apr. 18.—There was little of interest in the East Central Texas Field in the past week. The Humble Oil & Refining Co.'s well on the Earl & Ragsdale property west of Jacksonville, Cherokee County, is still shut in, and while geologists, engineers and leasers continue active, following the discovery of oil in the Boggy Creek salt dome, little new work has started. In this respect the discovery of oil in Cherokee County differed greatly from the discoveries made in the Mexia, Powell and Wortham area, where the first well was followed by record-making drilling campaigns.

In Anderson County the Humble Oil & Refining Co.'s No. 2-A Southern Pine Lumber Co. land, Morton Survey, was drilling below 3,025 feet.

In Cherokee County the Humble Oil & Refining Co. has commenced drilling No. 2 Earl & Dugdale, Johnson Survey. The Magnolia Petroleum Co. was expected to test the sand discovered at 4,328-34 feet in No. 1 Sumner with a Halliburton sand tester. The sand showed oil when cored, as reported last week

In Ellis County, Farish, Watts & Collins and others' No. 1 Rochel, Gayton Survey, was drilling in lime at 1,865 feet. Austin chalk was penetrated at 780 to 1,070 feet.

In Franklin County Trout and others' No. 1 Fandy 100 acres, Truitt Survey, was drilling in shale at 2,850 feet.

In Limestone County, C. W. Green and others are shut down at their No. 1 J. M. Dies, Garrison Survey, at a depth of 3,603 feet. Smith and others' No. 1 Stuberanch, Varella Survey, was drilling in lime at 5,460 feet. It is the deepest test in the territory. No oil showings have been reported thus far. The chalk was penetrated at 2,500 to 2,727 feet. Alexander & Liles were drilling at 3,296 feet in lime in No. 1 Sharp. McCarty and others tested their No. 1 Brown, Jackson Survey, in which they had a showing around 2,995 feet, and found no commercial production and will drill deeper. Alexander & Liles and others' No. 1 Strother, McKenzie Survey, is drilling shale at 3,276 feet. Pandem Oil Co. is shut down at 4,440 feet in No. 1 Bassett, Walker Survey. Dillon & Hammond are drilling at 3,400 feet in No. 1 Jones, Flippen Survey.

In Van Zandt County Cranfill Brothers' No. 1 Foster, Neal Survey, was abandoned at 2,708 feet in sticky shale.

In Navarro County the Magnolia Petroleum Co.'s No. 1 Marshall, Chambers County, was drilling in lime at 3,795 feet.

Late Fields

(Continued from Page 47)

Miller at Lockport is flowing 2,000 bbls. at 4,400 feet. Late completions increase the daily average gross production 6,000 bbls. over the average for last week.

Yount Lee Oil Co.'s No. 17 Gladys at Spindletop is flowing 3,000 bbls. at 3,270 feet. Same company's No. 24 fee, completed at 4,475 feet, started flowing 5,000 bbls. initial. The Shepherds Mound Oil Co. is rigging for a deep test at Shepherds Mound Dome, a semiwildcat location in Matagorda County.

NOAH C. ADAMS DIES; PIONEER GEOLOGIST

Noah C. Adams 36, geologist of Tulsa, Okla., died at his residence in that city on Monday, April 18. Funeral services were held in Tulsa and the remains were shipped to Fayetteville, Ark., for burial.

Mr. Adams had been active in the development of many prominent sections of the Mid-Continent Field, and was one of the very first geologists to acclaim the possibilities of the Seminole Field. He is credited with making the survey which resulted in the first structural map of the Seminole area in 1920.

Born at Fayetteville, Ark., he received his early education in the schools of that city, and entered the University of Arkansas from which he was graduated in 1914 with the degree of Bachelor of Science in civil engineering. He specialized in geology, and entered the oil industry when he became associate geologist for the Guffey-Gillespie Oil Co. of Ponca City, Okla. This company was subsequently taken over and became the Tidal-Osage Oil Co. He continued in the service of the Tidal-Osage for three years, when he resigned to engage in the business as an independent operator. He was interested in producing properties in several fields, notably the Bird Creek district, and the territory west of Tulsa.

At the time of his death he was a director of the Tulsa Trust Co. and the Tulsa Lumber Co., and was a member of the American Association of Petroleum Geologists, and Tau Beta Pi, an honorary engineering fraternity. He is survived by a widow and two children.

ELK HILLS BIDS REJECTED

WASHINGTON, D. C., Apr. 18.—Secretary of Navy Wilbur has rejected all bids for exchange or royalty oil for fuel oil to fill the tanks at Pearl Harbor, Hawaii. Ratios of exchange were disadvantageous to the Navy, the Secretary believed. The bids called for exchange of oil produced in Elk Hills, Calif., reserve under Doheny leases. It was planned to begin exchange of oil on termination of the receivership established during litigation attending the Elk Hills leases.

SHREVEPORT MARKETS FURTHER WEAKENED

SHREVEPORT, La., Apr. 18.—Refinery markets in the North Louisiana-Arkansas district were disappointing the past week and were marked only by further weakening and increasing difficulty on the part of sellers in disposing of their material. This week opened with one of the largest refiners quoting U. S. Motor gasoline at 6¼ cents. Other refiners were asking 6½ cents.

Flooded conditions throughout Louisiana, Arkansas and Mississippi are having a very bearish effect on the gasoline market locally not only by limiting consumption but also by handicapping shipments. Train service has been disrupted and in many cases the roads are refusing shipment out of Shreveport and Arkansas.

The Shreveport Producing & Refining Co. is shutting down its cracking units this week. This will cut down to some extent the gasoline output from this

source of supply but at the same time it may place an additional supply of gas oil and fuel oil on the market. The Crystal Oil & Refining Corp. is putting on stream this week its two new Jenkins high-pressure units, although it may be a week or longer before these are operating as desired.

Gas oil and fuel oil also are extremely weak and are finding no new demand despite sharp reductions in quotations by sellers. Gas oil was easily available at 2¾ to 3 cents Monday and refinery fuel at $1.10 to $1.15. Kerosene movements were confined only to scattered orders placed from 4½ to 4¾ cents.

Natural gasolines faced virtually a nominal market, that is, North Louisiana and Arkansas material. Refiners here have been buying but little gasoline and most of this is coming out of Group 3 or north Texas. Manufacturers here were quoting at 4½ cents on Grade C, f.o.b. Monroe, La.

EXPLOSION AT WELL NOT DUE TO TIME BOMB

Following an explosion accident which occurred recently at a well of Anderson and Prichard, near Borger, Tex., a press dispatch in the daily papers gave an account which later investigation proves to have been completely erroneous. This dispatch stated that the three fatalities, several additional serious injuries, and large property damage, were caused by the unexpected ejection from the well of a "time bomb" and its premature explosion upon emerging from the well.

Harry Rapp, manager of the U. S. Torpedo Co.'s station at Borger, which company was shooting the well, gives the following statement of the accident:

"Tex Thornton, a shooter well known in that field, placed a shell containing 30 quarts of nitroglycerin in this well and on top of it placed a time bomb, set to explode four hours later, as the well owners desired to remove part of the casing before the shot should explode. When approximately two hours had elapsed, and while the crew was pulling the casing, suddenly the well made a flow and ejected both bomb and ntiroglycerin. When the nitroglycerin shell struck the casing tackle suspended in the derrick the impact was sufficient to cause the nitroglycerin to explode, killing three men, injuring four others more or less seriously, and damaging the wooden derrick.

"The bomb, which contained only blasting caps and a small quantity of dynamite, was blown upward through the derrick and fell several hundred feet away, where it was found unexploded and with its container intact. When the time at which it was set to explode passed and it had failed to explode, due probably to the stoppage of its timing mechanism from the impact with the earth when it fell, a quantity of dynamite was exploded beside it, destroying it, to prevent possible accidental discharge in any attempt to disassemble it."

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 48)

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 600 feet N and W of SE cor. Sec. 676, W. & M. W. Sur. — Spudded and shut down.
C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott land — Fishing 1,300 ft.

COLLINGSWORTH COUNTY

Harmon & Dennis' No. 1 Wilson (Scott), Sec. 44, Blk. 21 — Location.
Wischkamper's No. 1 fee, C SE Sec. 93, Blk. 16 — Drilling 2,180 ft.

DALLAM COUNTY

James et al's No. 1 fee, Sec. 9, Blk. 47½ — Fishing 2,870 ft.
Harry Skelly et al's No. 1 Capitol Synd., Sec. 19, Blk. 17 — Drilling 2,420 ft.
Marland Oil Co. et al's No. 1 Capitol Syndicate, Sec. 36, Blk. 18, Capitol Syndicate land — Shut down 950 ft.

DEAF SMITH COUNTY

Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8 — Shut down 520 ft. for casing.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 93, Blk. K-4 — Shut down 710 ft.

DONLEY COUNTY

A. T. Drilling Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C — 1,200 ft. water from 3,115-22 ft.; show gas 3,140-60 ft.; bailing at 3,240 ft.

GRAY COUNTY

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B — Spudded and shut down.
Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25 — Shut down 610 ft. for 12-in.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B — Total depth 2,666 ft.; gas shut in and work suspended.
Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 2-B — Flowing 65 bbls. and 9,000,000 ft. gas from granite wash 2,965-74 ft.; deepening.
British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 3 — 58,000,000 ft. gas and slight spray oil; fishing bit 3,190 ft.
British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 — Rigging up.
Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17, Blk. 1 — Drilling 3,460 ft.
Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 — Rig.
Edwards et al's No. 1 E. J. Case — Building rig.
Empire G. & F. Co.'s No. 1 W. C. Archer, SW cor. NE Sec. 174, Blk. 3 — Drilling 2,650 ft.
Empire G. & F. Co.'s No. 1 J. F. Meers, NE cor. SE Sec. 107, Blk 3 — Drilling 1,950 ft.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3 — Total depth 2,930 ft.; shut down; 43,000,000 ft. gas; closed in.
Empire G. & F. Co.'s No. 1 Webb, SW cor. Sec. 59, Blk. 25 — Show of oil 2,457 ft.; drilling dry granite wash 2,885 ft., or 273 ft. below sea level.
Foster et al's No. 1 G. Cutebank, SW cor. NE Sec. 65, Blk. 25 — Drilling 1,800 ft.
Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk. 3 — Shut down 2,405 ft.
Gulf Production Co.'s No. 1 J. M. Saunders, Sec. 40, Blk. 3 — Swabbed 25 bbls. of 40.9 gravity oil at 3,066 ft.; total depth 3,075 ft.
Humble O. & R. Co.'s No. 1 T. B. Haggard, SW cor. Sec. 112, Blk. 3 — Drilling 3,005 ft.; show gas.
John G. Lane's No. 1 A. Chapman, Sec. 19, Blk. 1, A. C. & H. B. Sur. — Total depth 3,300 ft; 5 3/16-in. casing parted; now pulling.
Magnolia Pet. Co.'s No. 1 fee, Sec. 11, Blk. 3 — 1,800 ft. oil in sandy lime 2,955-87 ft.; shot 120 quarts; total depth 3,004 ft.
Neudigate et al's No. 1 A. Chapman, NE cor. E ½ SE Sec. 52, Blk. 25 — Shut down.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3 — Fishing for 15½-in. pipe 420 ft.
Pampa Pet. Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3 — Shut down 3,450 ft.; 1,500 ft. water from 3,320-60 ft.
Purple Sage Oil Co.'s No. 1 Johnson, Sec. 8, Rockwall County school land — Shut down 1,960 ft.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B — Shut down 2,900 ft.; rig burned.
Rensoul Pet. Co.'s (was Salisbury & Reynold's) No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. — Building rig.
C. B. Shafer's No. 1 G. Cole, SE cor. W ½ SW Sec. 105, Blk. 3 — Drilling 2,400 ft.
The Texas Company's No. 1 J. B. Barrett, NE cor. NW NW Sec. 130, Blk. 3 — Drilling 1,840 ft.
The Texas Company's No. 1 Osborne, Sec. 108, Blk. 3 — Total depth 2,855 ft.; to shoot.
The Texas Company's No. 3 Saunders, C E ½ Sec. 3, B & B Sur. — 11,000,000 ft. gas 2,395-2,415 ft.; shot 120 quarts 2,550-80 ft.; cleaning out.
Travis et al's No. 1 J. Back, Sec. 44, Blk. 25 — Shot with 120 quarts at 2,650-80 ft.; drilling 2,715 ft.; no oil.
J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 — Rig blown down.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Blk. 16 — Drilling 3,250 ft.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 — Drilling 2,250 ft.
Eslick et al's No. 1 J. B. Irving, Sec. 18, Blk. 13 — Drilling 2,575 ft.
J. E. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS — Shut down 3,500 ft.; contract depth.
J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22 — Shut down 1,030 ft.
J. E. McKanna's No. 1 J. M. Shelton estate, Sec. 29, Blk. 202 — Shut down 3,502 ft.; contract depth; will probably deepen.

HEMPHILL COUNTY

A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C — Spudded and shut down.
Hoover et al's No. 1 Schaller estate, Sec. 4 — Spudded and shut down.
Hoover et al's No. 1 fee, J. S. Hood Sur. — Small show oil and gas 4,027 ft.; hole full water in sandy lime 4,005-10 ft.; shut down 4,380 ft.

HUTCHINSON COUNTY

Amarillo Oil Co.'s No. 1 Ida Ingerton, 9,280 feet from NL and 330 feet from EL Sec. 41, Blk. 47 — Drilling 975 ft.
Anderson & Pritchard's No. 1 Yake, Sec. 1, Blk. J — Total depth 3,005 ft.; plugged back to 2,795 ft.; rig burned while trying to shoot.
Mariand Oil Co.s (Leo Flowers) No. 1 Carver, Wm. Heath Sur. — Spraying 15 bbls. salt water from 3,270-97 ft.; shut down 3,381 ft. for orders.
Pole Cat Oil Co.s No. 1 W. B. Haile, Sec. 24, Blk. M-21 — Rig.
Panfield Oil Co.'s No. 1 Luginbyhl Brothers, Sec. 50, Blk. M-23 — Shut down 1,200 ft.
Phillips Pet. Co.'s No. 1 Yake, Sec. 36, Blk. 46 — Cement. 1,960 ft. (corrected).
Skyrocket Oil Co.'s (was Pool & Golding's) No. 1 Mrs. R. A. Jameson, Antonio Dubois Sur. — 500,000 ft. gas 1,737-50 ft.; drilling 2,220 ft.
Prairie, Shamrock & Hagy's No. 1 Yake, Sec. 35, Blk. 47 — Total depth 3,290 ft.; plugged back to 2,875 ft.; shot 60 quarts 2,862-75 ft.; 100 ft. oil in hole.
Prairie Oil & Gas Co.'s No. 1 J. M. Sanford, SW cor. N ½ S ½ N¼ Sec. 85, Blk. 46 — Building rig.
Prairie O. & G. Co. and Vacuum Oil Co.'s No. 1 Cal Merchant — Spudding.

LIPSCOMB COUNTY

McCorkle's No. 1 A. Barton — Fishing 3,760 ft.
Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW Sec. 100, Blk. 43 — Pipe trouble 1,150 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Masterson-J, Sec. 59, Blk. O-13 — Shut down 3,190 ft.
Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 — Drilling 3,120 ft.
Douglas Oil Co.'s No. 1 H. M. Beauchamp, Sec. 112, Blk. 44 — Drilling 2,880 ft.
Mariand Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1 — Shut down 3,073 ft.
Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44 — Drilling 3,755 ft.
Morton & Co.'s No. 1 Reeder, Sec. 191, Blk 3-T — Lime 2,805-55 ft.; trying to mud off 62,000,000 ft. gas.
Phillips Pet. Co.'s No. 2 Special Sneed — Drilling 2,050 ft.
Moore County Oil Co.'s No. 1 Sneed, Sec. 30, Blk. 6-T — Drilling by tools 1,970 ft.
Shadler Brothers' No. 1 John Lowery, Sec. 237, Blk. 44 — Shut down 1,365 ft.; 12½-in. casing froze.
Skelly Oil Co.'s No. 1 Armstrong & Byrd — New location; rig on ground.
Prairie and Shamrock's No. 1 Gober, Sec. 16, Blk. M-21 — Total depth 1,120 ft; to skid rig.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43 — Shut down 3,830 ft. for 5-in.
Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 43 — Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 — Shut down 1,600 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 — Rig.
Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43 — Shut down 900 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landergin, SE cor. NE SW Sec. 46, League 310, Capital land — Drilling 2,840 ft.

POTTER COUNTY

Greater Amarillo Pet. Co.'s No. 1 Townsite, Sec. 167, Blk. 2, A. B. & M. Sur. — Shut down 2,020 ft.; temporarily abandoned.
Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1 — Shut down 200 ft.; temporarily abandoned.
Kelmey Oil Co.'s No. 1 W. H. Bush, Sec. 19, Blk. 9 — Rig; temporarily abandoned.

RANDALL COUNTY

Patterson et al's No. 1 Campbell & McIlroy, NE cor. Sec. 60, Blk. K-14, T. T. R. R. Sur. — Spudded and temporarily abandoned.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A — Shut down 4,910 ft. for material.
Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2 — Cellar; temporarily abandoned.
Gibson Oil Corp.'s No. 1 T. S. Jones — Salt water 4,143-60 ft.; drilling 4,220 ft.
Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2 — Shut down 650 ft.
Charles Page et al's No. 1 Hamilton, Tract 2, Clay County school land — Shut down 440 ft.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B — Drilling 1,180 ft.
Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur. — Location.
Phillips Pet. Co.'s No. 1 Price & Fuqua, C NE Sec. 33, Blk. 2-B, G. H. & H. Sur. — Location.
Whitehead et al's No. 1 Lee Bivins, C SW Sec. 36, Blk. 2, G. H. & H. Sur. — Location.

SWISHER COUNTY

R. H. Miller's No. 1 Todd — Location temporarily abandoned.

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 — Shut down 2,029 ft.; 8,000,000 ft. gas, show of oil, 2,027 ft.
Angus et al's No. 1 G. A. Morgan, SW cor. SW NE Sec. 93, Blk. 17 — Drilling 950 ft.
Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24 — Fishing for bit 2,400 ft.
Continental Oil Co.'s No. 2 J. H. Jackson, SE cor. NE Sec. 11, Blk. 27 — Preparing to abandon 2,378 ft.
Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. — Spudded and shut down.
Lone Star Gas Co.'s No. 1 C. A. Linkey, C NW SE Sec. 129, Blk. 23 — Drilling 1,320 ft.
Lone Star Gas Co.'s No. 1 R. S. Alexander, NE NW Sec. 11, Blk. 27 — Drilling 520 ft.
Magnolia Pet. Co.'s No. 1 J. A. Worley, NE cor. Sec. 39, Sec. 42, Blk. 24 — Set 8-in. 2,280 ft.
Mariand Oil Co.'s No. 2 W. E. Bentley — Underreaming 8¼-in. to 1,500 ft.; cement 8-in. 1,740 ft.
Murchison & Fain's No. 1 Close, Sec. 77, Blk. 23 — 10,000,000 ft. gas 1,585-1,610 ft.; shut down.
North Texas Oil Co.'s No. 1 J. H. Jackson, NE NW Sec. 11, Blk. 27 — Drilling 1,180 ft.
J. J. Rook's No. 1 M. Mertel, SE NE Sec. 4, Blk. 24, H. & G. N. Sur. — Spudding.
J. J. Rock Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 24 — Fishing casing 1,300 ft.
J. J. Rook's No. 1 C. W. Porter, SW cor. NW Sec. 41, Blk. 24 — Drilling 1,690 ft.
Wheeler O. & G. Co.'s No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 — Spudded and shut down.
Smith, Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A — Drilling 2,000 ft.
E. L. Woodley, Jr., No. 1 Woodley, Sr., Sec. 13, Blk. 5-A — Fishing bailer 2,235 ft.
Watchorn O. & G. Co.'s No. 1 F. E. Shelton, C NE NE Sec. 22, Blk. 24 — Shut down for repairs 970 ft.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

DETERMINATION OF PARAFFIN WAX

Will you give me the outlines of a reliable method for obtaining the wax content of oil?—I. E. B.

The best known method for determining paraffin wax in crude oils, lubricating oils, and other petroleum products is that of Holde, which is described in detail in Hydrocarbon Oils and Saponifiable Fats and Waxes by Holde, translated by Mueller, second edition, Pages 108 and 249. When examining crude oil 100 grams are distilled to 300 degrees Centigrade, or 572 degrees Fahrenheit; then a weighed receiver is put into position, without a condenser, and the oil reduced to coke. This distillate is examined for paraffin by the alcohol-ether method, which is based on the fact that the wax is precipitated by alcohol from an ether solution at low temperatures. Repeated solution and precipitation is necessary to obtain pure wax, which is weighed and calculated to the original oil.

With slight modifications the method of Henderson and Ferris, Ind. and Eng. Chem., Vol. 19, p. 202, February, 1927, may be used for determining the wax in oil. It will be necessary to concentrate the crude when small quantities are present. The method is founded upon the difference in the solubility of wax and oil in nitrobenzene, the wax being insoluble in the nitrobenzene under the conditions of the analysis.

A special flask is made so as to provide a pocket in the bottom of the flask, by sealing about 1 inch of a test tube to the bottom of a flask. Ten grams of the sample is weighed into the flask. The sample should be weighed while liquid. The flask is placed in a beaker, suitably covered to form a jacket, and 20 cc. of nitrobenzene added. The temperature of the mixture is raised to 159 degrees Fahrenheit by means of heated air introduced into the jacket, and at the same time the mixture is agitated with air at the rate of one bubble a second. The heating is continued until the liquid reaches 158 degrees Fahrenheit, then cooled with cold air to 90 degrees Fahrenheit, and this temperature held for 5 minutes. This temperature yields 122-124 degrees Fahrenheit melting point wax.

On account of the high specific gravity of the nitrobenzene the wax floats on the surface, with the oil-nitrobenzene solution in the narrow test-tube portion. The layer containing the oil is drawn off by suction; 20 cc. nitrobenzene added and the procedure repeated. Finally the wax layer is heated to 275 degrees Fahrenheit, while in the flask, and the nitrobenzene removed by suction. Air is bubbled through the flask while the temperature is 302 degrees Fahrenheit. The wax may be obtained by weighing with the flask. The melting point of the wax may be obtained in the flask by noting the temperature every 30 seconds as the wax cools.

SIMPLE TESTS FOR DETERMINING THE QUALITY OF LUBRICATING OIL

What information can you give a layman for making simple tests for determining the quality of a lubricating oil such as is used in a six cylinder automobile; that is a test whether the oil will stand up under the internal heat of the motor?—H. S.

The general appearance, including clearness, together with absence of any strong odor, and sediment, when left standing over night, should be of some assistance in enabling you to arrive at an idea of the quality of a lubricating oil. While color has nothing to do with the performance value of an oil, the color of a motor oil should not be very dark. A very dark oil may indicate faulty refining including failure to remove tars and gums which tend to give trouble in the motor. Motor oils should have no other odor than 'oily.' If an oil deposits sediment or water on standing the fact should be enough evidence to indicate the lack of proper care in its manufacture.

It is not advisable for one having no experience to endeavor to make the ordinary chemical and physical tests which are used for the examination of lubricating oils. It is necessary that such examinations be made by a person having particular knowledge and experience, otherwise the results can be of little value. The commercial laboratories of your city are well prepared to do such work for a comparatively small fee.

The cost of lubricating oil is so low and it is always possible to obtain excellent quality from the reliable dealers, that the lubricating cost for operating the average automobile is a small item. The insurance against expensive damage to the engine which good lubrication gives, is commonly obtained by changing the oil frequently. When the engine is in excellent condition this change may be made every 1,000 miles, but 500 miles is quite generally considered to be safer.

GASES DISSOLVED IN SALT WATER NOT RELIABLE INDICATION OF OIL

Will you kindly tell me what data on the presence of oil may be presumed by the finding of gases dissolved in salt water encountered in drilling oil wells? Is there any study on the analyses of such gases with approximate conclusions?—L. V.

The gases which have been found in the salt water encountered when drilling for gas or oil, include, hydrogen sulphide, carbon dioxide and natural gas. Air and carbon dioxide are without significance with respect to the possibilities for finding petroleum very close to the sand from which the water was obtained. The quantity of air held in the water is always very small but there may be appreciable quantities of hydrogen sulphide and carbon dioxide.

It appears that no definite interpretation may be made with respect to the presence of hydrogen sulphide. In some fields it is considered to be an unfavorable sign and favorable in others. There are commercial oil wells reported to produce some water containing hydrogen sulphide, in Mexico, the Texas Panhandle and the Smackover district of Arkansas.

In general the finding of water is considered to be unfavorable. If the water contains a distinct trace of natural gas, and especially a show of oil, the same sand may be productive at some other spot on the structure. There are many instances where oil is found upon further drilling into a sand after water has been encountered in the upper part but in such cases the water is in small quantities and there is usually a hardening of the sand or some break in the formation. Frequently water is produced with gas, and there are paying oil wells which produce some water.

AUTOMOBILE FUMES AND CARBON DIOXIDE

I drive a bus and have complaints that the gases which escape from the motor into the bus contain considerable carbon monoxide which makes the eyes smart and also hurt the throat. I notice these gases more after adding new oil than at any other time. Can they be prevented by some kind of absorber being attached to the exhaust which will absorb the carbon monoxide so to stop the trouble? —R. W. H.

Similar statements to this are often made about the fumes which are noticed around a hot motor, but, while there may be objectionable odors, it is not a fact that the fumes contain considerable quantities of the dangerous gas carbon monoxide. It is not possible to detect carbon monoxide by the senses because it is without color or odor and is tasteless. There may be enough carbon monoxide in the exhaust from an automobile to be dangerous when the engine is permitted to run in an enclosed building, and possibly to escape through the floorboards into a closed car or into a bus. However, this possibility is remote and certainly cannot apply to your case. When a car is moving the gases are carried away and soon become so diluted by the air that there is no danger. Persons overcome by carbon monoxide appear to collapse and death results without warning. The fact that the odors are noticed soon after adding fresh oil to the car would indicate, as is quite common, that some oil reached the hot parts of the engine and the objectionable fumes were caused by the burning of the oil.

When combustion is complete the gas formed is carbon dioxide and there is no monoxide. It results from the fact that there is not enough air present to supply the quantity of oxygen necessary to complete the oxidation of the carbon to the dioxide.

There are some substances which will absorb carbon monoxide, but as their action is limited to delicate control, it is not thought that commercial application in the form of some attachment to the exhaust, will be found feasible.

SEDIMENT TEST RESULTS NOT RELIABLE WITH GASOLINE

What is the objection to the use of gasoline for breaking a crude oil when testing for b.s. with a centrifuge?—F. U.

There is no official recognition of gasoline for the purpose of diluting oil when making the centrifugal test for sediment. Some operators are known to use gasoline in this determination but the results cannot be more than very rough approximations, especially with many oils, because some hydrocarbon substances are precipitated in the presence of gasoline and therefore, in such instances, give a reading which appears high and misleading.

The purpose of the centrifugal test is to determine the quantity of insoluble material and water that may be present, but when it is essential to know the percentage of water a separate determination should be made by the distillation method.

Benzol is the recognized solvent to be used when making this test. Asphaltic bodies are not soluble in gasoline so if it should be used when testing asphaltic oils, or mixed base oils, the results would appear to indicate a larger quantity of sediment in the oil than was actually present. The methods of the A. S. T. M., which have, to a large extent, been adopted by the United States Government for inspection of materials, have been developed after thorough investigation, are considered reliable and therefore safe to follow for control and inspection purposes.

MANUFACTURE OF ARTIFICIAL GAS

Will you give me a description of the methods for making artificial gas from coal and water? What is the heating value of these gases as compared with natural gas?—C. D. F.

Coal gas is made by heating bituminous coal to a very high temperature in closed chambers or retorts, from which the gas is withdrawn and there remains in the retort a residue of coke. The coke, commonly known as gas house coke, is used for domestic purposes. As the gas passes from the retort it flows through a condenser where water, oil and tar are removed. There is some ammonia produced which is removed by means of a scrubber. The coal gas is next purified by passing over substances saturated with iron oxide; this operation reduces the quantity of sulphur contained in the gas. The finished gas is stored in large holders.

Water gas derives its name from the fact that steam is passed through a mass of red-hot carbon. The product is a mixture of the two gases, hydrogen and carbon monoxide. The operation of the process is intermittent, because after a few minutes' contact the steam chills the hot mass below the temperature necessary to decompose the steam. So the steam is cut off for a short time while air is blown into the bed of carbon long enough to bring back the required heat, when the steam is again admitted. The hot period is the gas-making time, or up time, and while the air is on there is no gas saved, this is the down time. This kind of gas is not luminous so it is necessary, when used for illuminating purposes, to add some substances that will furnish carbon which will be liberated into the flame. The heating value of the pure gas is low, so it is the practice to add hydrocarbons in the form of petroleum oils or benzol to enrich the gas.

The heating value of coal gas may vary between 650 and 550; water gas may have a heating value around 300, but it is possible to enrich it to 450 or even to 650 B.t.u. The usual heating value of natural gas is about 1,000 B.t.u., although some natural gas is found having a much lower value; examples showing commercial natural gas having only 600 B.t.u. may be cited.

Considerable possibilities for enrichment material to be used in the artificial gas industry are to be found in the proposal to liquefy butane, now wasted in the residue gas from natural gasoline manufacture. This product has a very high heating value, and if suitable containers are provided, it may be transported in such a concentrated form that great quantities of heat units will be available.

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Sulphur Compounds in Oil Distillate

Explain Reactions of Sulphuric Acid, Doctor and Hypochlorite Solutions, on Mercaptans Dissolved in Gasoline

By H. T. Bennett and R. G. Story
Mid-Continent Petroleum Corp., Tulsa, Okla.

A study of some of the reactions of certain sulphur compounds was made in an effort to find an explanation for some of the phenomena noted in treating light oil distillates. Wendt and Diggs[1] have shown that mercaptans form the chief group of sulphur compounds (aside from H-S) which give the reaction known to refiners as "sour doctor test." The reactions of mercaptans and related compounds it was thought, may account for a number of well-known observations in treating gasoline and other distillates.

It has been noted that gasoline which gave a "sour doctor test" could be sweetened by treatment with 66 degrees sulphuric acid, and that sulphur dioxide was generated during the reaction. That this is probably due to the reactions of mercaptans will be shown from the following experiments.

The gasoline used in the various tests was straight run from crude which had been specially treated. This gasoline was free from sulphur, sweet to doctor and generated no sulphur dioxide when treated with sulphuric acid.

The sweetening of sour gasolines by sulphuric acid is an oxidation reaction and if the correct time elapses it proceeds to completion and the disulphide is the final product.[2,3] In the ordinary refinery operation, however, the time is not regulated and often sulphur dioxide continues to be liberated until the neutralization operation takes place in which case other reactions may occur.

Experimental Procedure

A sample of normal butyl mercaptan (boiling point 96-98 degrees Centigrade) made by Eastman Kodak Co., was dissolved in the straightrun gasoline. The product was very sour to doctor, but by treating with 66 degrees sulphuric acid, a violent evolution of sulphuric dioxide took place, the sample became sweet to doctor and the sulphur was reduced from 0.46 per cent to 0.26 per cent. The sulphuric acid layer separated from the oil after treatment was diluted with several volumes of water and an oil separated on the surface. This was extracted with ether and was found to have a peculiar odor, a boiling point of 340 degrees Fahrenheit and sulphur content of 31.5 per cent. The sulphur content corresponds to butyl thiosulphonic ester. This ester has not been found in the literature, but others of this type have been prepared by oxidation of mercaptans with dilute nitric acid.[1,2] The butyl mercaptan was oxidized in this manner with dilute nitric acid, and an oil resulted having a sulphur content of 30.59 per cent, boiling point of 340 degrees Fahrenheit, and the same odor as that obtained before. This indicated that the sulphuric acid reacted on the mercaptans in the gasoline as follows:

$$2C_4H_9SH + H_2SO_4 \rightarrow C_4H_9\text{-}S\text{-}S\text{-}C_4H_9 + SO_2 + 2H_2O.$$

$$C_4H_9\text{-}S\text{-}S\text{-}C_4H_9 + 2H_2SO_4 \rightarrow C_4H_9\text{-}S\text{-}SO_2\text{-}C_4H_9 + 2SO_2 + 2H_2O.$$

The ester is somewhat soluble in concentrated sulphuric acid and is extracted by it. When the acid is diluted the ester separates as an oily layer. When a large quantity of mercaptans is present in the oil, the reaction products probably distribute themselves between the oil and the acid. In the early stages of the reaction, the disulphide is formed but is finally removed from the oil by the acid as the ester.

Effect of Ester

The effect of butyl disulphide and butyl thiosulphonic ester in the refining of light oil distillates was determined as follows: The ester was dissolved in the gasoline and subjected to fire and steam distillation. Decomposition of the ester takes place, producing a yellow color in the oil with the liberation of sulphur dioxide and a small amount of mercaptan. It was also noted that when the sample of gasoline containing the sulphonic ester was allowed to stand a yellow gummy product collected in the container. These results may explain some of the reactions of acid treated distillates in the refinery.

Butyl disulphide was prepared by treating butyl mercaptan with doctor solution and also by treatment with sodium hypochlorite. Two per cent of the disulphide was added to a sample of the purified straightrun gasoline and the color was found to drop from 30 plus to 20 Saybolt in 24 hours and to 10 color in two weeks in diffused light, while the same gasoline without the disulphide remained 30 plus color. While this quantity of disulphide is larger than perhaps ever happens in actual operation, yet it demonstrates what may take place if quantities of these materials are left in the finished product.

Sweetening With Doctor

The sweetening with doctor has been found to decrease the sulphur content of a gasoline more than hypochlorite treatment. This is due to the absorption of sulphur compounds by the lead sulphide precipitate. While hypochlorite produces the same reaction products yet they are practically all left in the oil. This may account for the superior color stability of doctor treated products.

Normal butyl mercaptan, because of its boiling range, probably occurs in petroleum distillates. Because of the small percentage of mercaptans present, they were not identified but the odor of normal butyl mercaptan could be detected in a number of samples.

Summary. The reactions of some treating reagents on butyl mercaptan dissolved in gasoline have been studied. Sulphuric acid produced butyl disulphide and butyl thiosulphonic butyl ester. Doctor and hypochlorite produce the disulphide. The effect of these reaction products in the refining operations is discussed.

[1] Ind. & Eng. Chem. vol. 16, p. 1113, 1924.
[2] Ind. & Eng. Chem., vol. 16, p-1117, 1924.
[3] Ind. & Eng. Chem., vol. 18, p-169, 1926.
[1] Richter's Organic Chemistry, vol. 1, p. 147.
[2] Berechte, vol. 19, pp. 1241, 3131.

VOLATILITY NEEDS DEPENDENT ON OPERATING TEMPERATURES

The necessary volatility in gasoline for ease in engine starting is dependent on the temperatures with which the engine is to be operated according to the fuel research committee of the Bureau of Standards. Two points on the standard A. S. T. M. distillation curve will give the necessary specifications in a motor fuel. Thus a knowledge of the fuel requirements for each season in any locality and two points on the distillation curve for a given fuel appear sufficient to determine whether the fuel is better or worse than is required for starting.

The above conclusions have been agreed to as a result of fuel research which has been carried on by the Bureau of Standards since 1915, according to a report just issued in the Technical News Bulletin of the Department of Commerce. The research consisted of engine tests to determine the time required for engine starting under various conditions of temperature, mixture supplied, etc., with various fuels. Laboratory tests of the fuels were also made. The following report summarizes the result obtained.

"When the results of the engine tests and of the laboratory tests were analyzed, it was found possible to establish a direct relation between engine-starting performance and the fuel volatility data. The laboratory volatility test which comes nearest to representing actual conditions as they exist in the engine manifold is the equilibrium air distillation. In this test measured amounts of air and liquid fuel are supplied at a constant rate to an evaporating coil which is maintained at constant temperature, and the rate of collection of unevaporated fuel is measured. This gives, by difference, the percentage of the fuel which will evaporate at a definite temperature when mixed with air in a definite proportion. It was found that when resultant fuel-air ratios, obtained in equilibrium air distillations with the same mixture ratio supplied and the same temperatures employed in the engine tests, were plotted against the number of engine revolutions required to start, all the results could be represented by a single curve. Hence, the resultant fuel-air ratio alone determines the number of revolutions required to start, the effects of different fuels, different temperatures, etc., appearing only as they affect the resultant fuel-air ratio.

The amount of cranking required to start any engine on a given fuel at a given temperature appears to depend on the richness of the mixture supplied at the carburetor and the percentage of the fuel which can be evaporated in such a mixture at the given temperature. The fuel requirements for engine starting have been defined (tentatively) as follows: (1) Possible starting with a 1:1 mixture supplied at the lowest temperature ever anticipated, and (2) starting in 10 engine revolutions with 1:2 fuel-air mixture supplied at the average (daily) minimum temperature encountered in service. These definitions serve to fix the percentage of the fuel which must be evaporated at each of the temperatures in equilibrium air distillations; namely, 5 per cent in a 1:1 mixture and 15 per cent in a 1:2 fuel-air mixture supplied. For each of nine fuels studied the ratios of the absolute temperatures corresponding to 5 per cent evaporated in the standard American Society for Testing Materials distillation and in the equilibrium air distillation are practically constant and the same result is found in the case of 15 per cent evaporated. Thus, it becomes possible to interpret the results of the engine-starting tests directly in terms of the A. S. T. M. distillation curve of the fuels used. The following conclusions have been reached:

1. Fuel requirements for engine starting depend largely on the temperatures anticipated in service. These temperatures may be obtained for any given locality from United States Weather Bureau statistics.

2. Two points on the standard A. S. T. M. distillation curve appear to be an adequate means of specifying the fuel to meet given requirements. Conversely, these points on the distillation curve serve to determine the temperatures at which a given fuel is most suitable for engine starting.

3. A knowledge of the fuel requirements for each season in any locality and two points on the distillation curve for a given fuel appear sufficient to determine whether the fuel is better or worse than is required for starting.

4. If the fuel is better than required, excessive evaporation losses in production and distillation constitute unnecessary waste. If the fuel is worse than required, excessive consumption during starting would appear to constitute avoidable waste.

LINCOLN OIL REFINING ELECTION OF OFFICERS

The annual meeting of the Lincoln Oil Refining Co. was held at the general offices of the company at Robinson, Ill., Thursday, April 7, at which time the following officers were elected for the coming year:

President, J. K. Kerr, Marshall, Ill.; vice president, H. B. Carpenter, Findlay, Ohio; secretary, W. B. Filson, Findlay, Ohio; treasurer, F. A. Billstone, Findlay, Ohio; manager, H. L. Deming, Robinson, Ill.; sales manager, N. T. Stover, Robinson, Ill.; general superintendent, R. E. Luton, Robinson, Ill.

Directors elected were: J. F. Kerr, Marshall, Ill.; H. B. Carpenter, Findlay, Ohio; C. C. Carroll, Marshall, Ill.; C. L. Fleming, Findlay, Ohio; F. A. Billstone, Findlay, Ohio; H. L. Deming, Robinson, Ill.; N. T. Stover, Robinson, Ill.

The new plant of the company which has been under construction is now fully completed, all the units now being in operation. This, in addition to the old plant, gives the Lincoln Oil Refining Co. one of the most modern refining units in the country.

AMERADA INCREASING GASOLINE CAPACITY

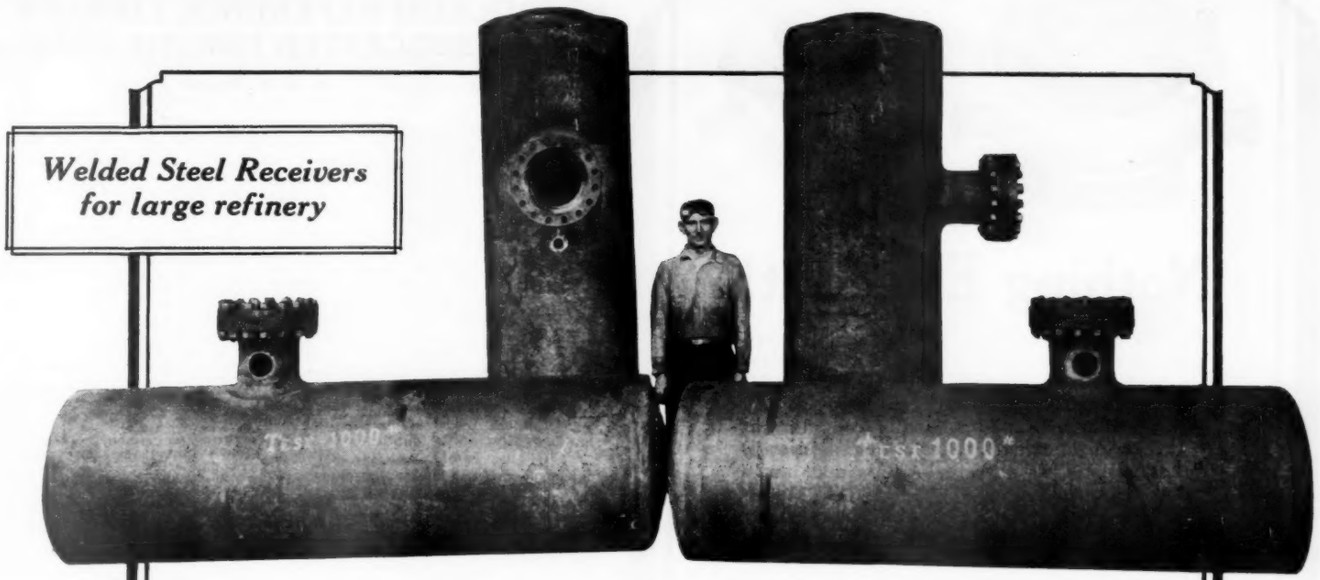
The Amerada Petroleum Corp. is increasing the capacity of its gasoline plant located on the Wentz Oil Corp.'s Shore lease in the Fry Pool of Brown County, Texas. It has 8 units with a capacity of 20,000 gallons daily and 3 more are being added. These will be ready in about 10 days and will raise the capacity of the plant to 30,000 gallons. Operations were started February 4 but the plant has been running to its full capacity only during the past two weeks. During March its output was a little more than 200,000 gallons.

The Amerada also has a 2-unit plant in operation on its own M. E. Fry lease. This was originally a portable plant but is now a permanent installation. It takes the gas north of the creek.

Gas in the Fry Pool makes about 3 gallons per thousand feet.

BUY IN TANK CARS

CHICAGO, Apr. 16.—The Chicago post office department has changed its methods of purchasing gasoline for the numerous trucks and delivery cars and now buys in tank car lots. It has awarded the contract for the quarter beginning today to the Jewett & Sowers Oil Co., who will purchase the gasoline and store it in their yards to be delivered to the department tank truck. It is stated that the price is to be the published market as determined by reports issued date of purchase plus a brokerage fee of one-quarter of a cent and a handling charge of one-half a cent. The post office department will profit by the low rate for government freights, often termed the land grant rate. The previous method was to ask bids at so much under the prevailing local tank wagon rate during the period of the contract.



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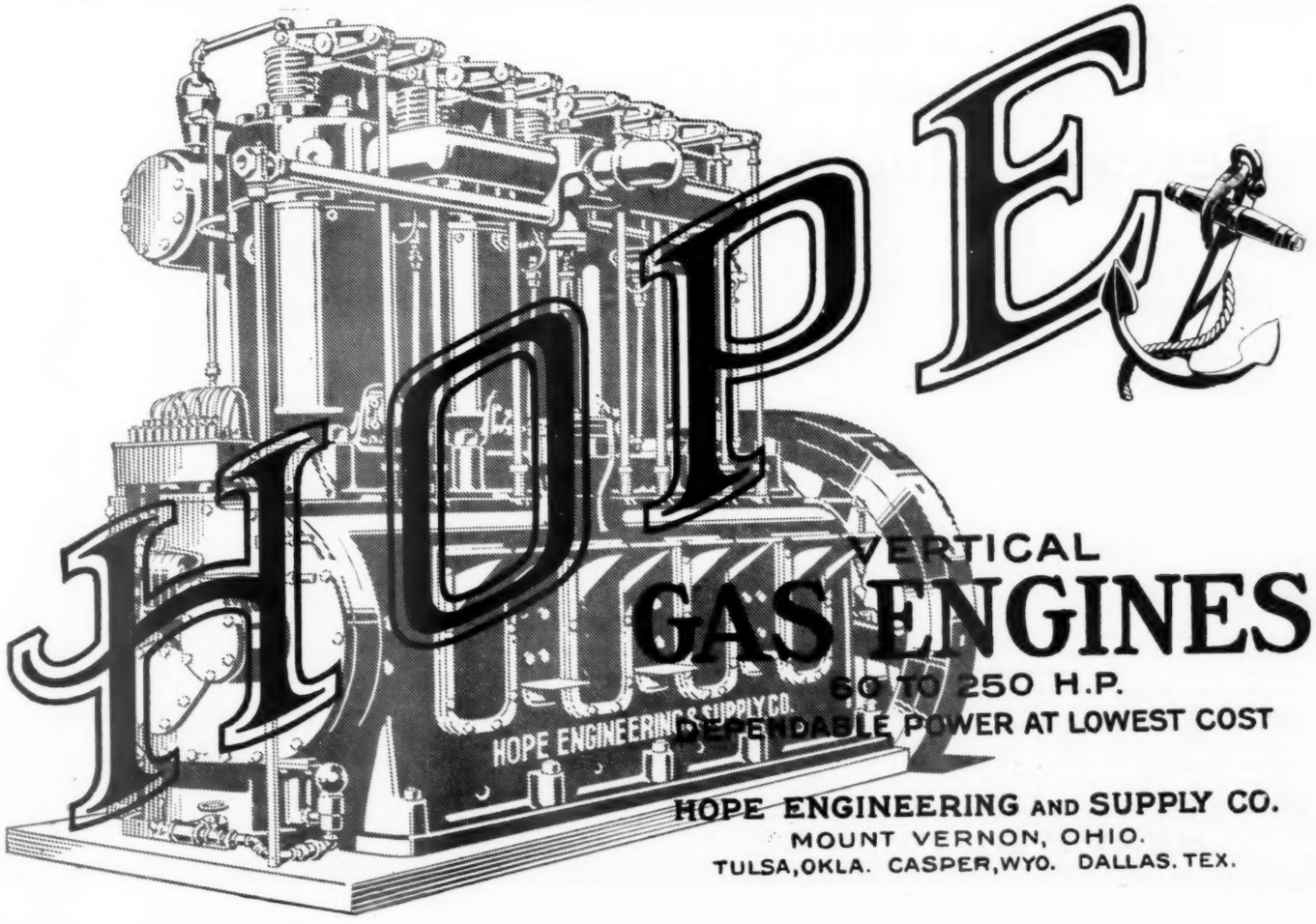

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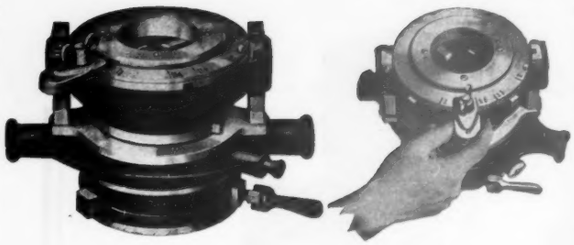

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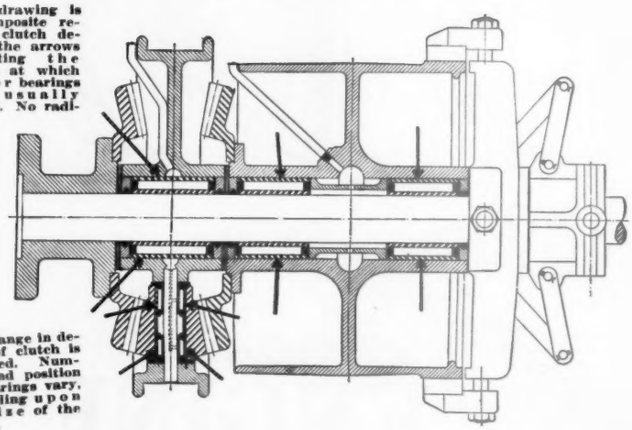

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PETROLEUM REFERENCE LIBRARY SUGGESTED FOR OIL COMPANIES

By F. W. Lundell
Technology Librarian, Tulsa Public Library

The books listed here are suggested as a source of information about the various branches of the petroleum industry. It is not intended as a complete list, but it is expected to cover the field in a general way and to give enough details about any one subject to serve as a valuable aid to those interested in petroleum.

These books may be purchased at retail prices well below $500, and if ordered at one time through one agency should not cost over $400.

There are many additions which should be made to this library from the numerous publications of the United States departments at Washington, and also the bulletins prepared by some of the states will be found to be of considerable assistance. Most of the publications of this character may be obtained free of cost or for the payment of nominal sums.

Key to Publishers

AGA—American Gas Association, Los Angeles, Calif.
AIMME—American Institute of Mining and Metallurgical Engineers, 29 West Thirty-ninth Street, New York City.
A—W. H. Anderson Co., Cincinnati, Ohio.
CCC—Chemical Catalog Co., 19 East Fourteenth Street, New York City.
CPC—Chemical Publishing Co., Easton, Pa.
DP—Doubleday, Page & Co., Garden City, Long Island, N. Y.
D—Dutton & Co., 681 Fifth Avenue, New York City.
FC—Foxboro Co., Foxboro, Mass.
G—J. B. Lippincott Co., Philadelphia, Pa., or Charles Griffin & Co., London.
GPC—Gulf Publishing Co., Houston, Tex.
HPC—Harlow Publishing Co., Oklahoma City, Okla.
H—Harper & Brothers, New York City.
KKC—King Knight Co., San Francisco, Calif.
L—Lockwood, London.
LG—Longmans, Green & Co., 681 Fifth Avenue, New York City.
MC—Macmillan Co., New York City.
McGH—McGraw-Hill Book Co., 370 Fifth Avenue, New York City.
MPC—McKinley Publishing Co., Kansas City, Mo.
MMW—Metric Metal Works, Erie, Pa.
PPC—Post Publishing Co., Dallas, Tex.
SC—Spon & Chamberlin, 120 Liberty Street, New York City.
TCC—The Century Co., New York City.
UGI—United Gas Improvement Co., Philadelphia, Pa.
VN—D. Van Nostrand Co., 8 Warren Street, New York City.
WEPC—Western Engineering Publishing Co., San Francisco, Calif.
WS—John Wiley & Sons, New York City.
X—G. C. Oberfell and R. C. Alden, Tulsa, Okla.
YUP—Yale University Press, New Haven, Conn.

Title—	Author	Publisher	Price
Accounting for the Petroleum Industry	Morland and McKee	McGH	$4.00
Analysis, of Fuel Gas Water and Lubricants	Parr	McGH	2.50
Analysis, Technical Gas and Fuel	White	McGH	3.00
Casing Hear Gas, Handbook of	Westcott	MMW	3.75
Catalysis in Organic Chemistry	Sabatier	VN	5.00
Chemical Analysis, Standard Methods of	Scott	VN	10.00
Chemical Annual	Olsen	VN	5.00
Chemical Engineering	Walker, Lewis and McAdams	McGH	5.00
Chemistry Inorganic	Smith	TCC	3.00
Chemistry of the Non-Benzenoid Hydrocarbons	Brooks	CCC	7.00
Chemistry of Petroleum and Its Substitutes	Tinkler and Challenger	L	3.75
Chemistry, Richters Organic	Spielmann	BSC	3.50
Corrosion and Preservation of Iron and Steel	Cushman and Gardner	McGH	5.00
Distillation Principles	Sydney Young	MC	10.00
Development and Valuation, Oil Land	McLaughlin	McGH	3.00
Drilling, Deep Well	Jeffery	GPC	6.00
Drilling, Oil Well	Ziegler	WS	3.00
Economics of Petroleum	Pogue	WS	6.00
Engineering, Petroleum	Phelps and Lake	GPC	5.00
Evolution of the Oil Industry	Ross	DP	1.50
Exploration and Development, Oilfield	Thompson	VN	36.00
First Principles of the Oil Business	McNutt and Lambert	MPC	3.00
Flow in Pipe Lines, Oil	Danforth	KKC	3.00
Forms, Mid-Continent Oil and Gas	Street et al	PPC	7.50
Fuel, Liquid and Its Apparatus	Booth	D	4.00
Fractional Distillation, Elements of	Robinson	McGH	2.50
Gas Analysis	Dennis	MC	2.00
Gas Chemists Handbook	Amer. Gas Assn.	AGA	5.40
Gas Distribution, A Manual of	Forstall	UGI	3.50
Gas Measurement and Orifice Meter	Brown	FC	3.50
Gasoline and Other Motor Fuels	Ellis and Meigs	VN	10.00
Gasoline, Natural	Oberfell and Alden	X	7.50
Geology, Elements of Petroleum	Van Tuyl	PPC	4.00
Geology, Field Methods in Petroleum	Cox and Dake	McGH	3.00
Geology of Petroleum	Emmons	McGH	6.00
Geology of Petroleum, Outlines of the Occurences	Stigand	G	4.50
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Handbook of the Petroleum Industry	Day	WS	15.00
Heat, Practical	Croft	McGH	5.00
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Mid-Continent Fields, Oil and Gas in the	Snider	HPC	5.00
Mid-Continent Oilfield, Geology of the	Bosworth	MC	3.00
Mineral Oils and Their By-Products	I. I. Redwood	SC	5.00
Motor Fuels	Leslie	CCC	7.00
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Prairie Oil & Gas Co.'s No. 1 J. M. Sanford, 330 feet north and east of SW cor. of north 80 acres of south 480 acres of Section 85, Block 46, H. & T. C. Survey.

Wheeler County

Lone Star Gas Co.'s No. 1 R. S. Alexander, 330 feet south and east of NW cor. of SW Section 92, Block 17, H. & G. N. Survey; No. 1 C. A. Linkey, C NW SE, Section 129, Block 23, same survey. North Texas Oil Co.'s No. 1 J H. Jackson, 330 feet south and west of NE cor. NW Section 11, Block 27, same survey. J. J. Rock's No. 1 M. Mertel, 330 feet north and west of SE cor. NE Section 4, Block 24, same survey.

NORTH AND CENTRAL WEST TEXAS

Archer County

Muse & Robertson and others' No. 1 B. E. Cranfill, 150 feet north and 870 feet west of SE cor. of east 40 acres of south 80 acres of F. F. Rodemeyer Survey, No. 25, A-361. Simms Oil Co.'s No. 20 J. H. Turbeville-A, 1,050 feet north and 450 feet west of SE cor. of west 80 acres of south 257 acres of Robert Carson Survey, No. 172. R. I. Carter and others' No. 1 G. M. Benson, 1,715 feet south and 785 feet east of NW cor. of Section 1,830, T. E. & L. Survey. Cosden-Consolidated Oil Co.'s No. 2 C. S. Richardson, 450 feet south and east of NW cor. of south 200 acres of Section 10, Club Ranch Subdivision. Roxana Petroleum Corp.'s No. 5 Abercrombie & Taylor-B, 450 feet north and 810 feet east of SW cor. SW NE, Section 2, S. P. R. R. Survey, A-1,281. Shappell Oil Co.'s No. 11 R. O. Prideaux, 150 feet north and east of SW cor. J. Dorsey Survey, A-121.

Borden County

J. L. Kennedy's No. 1 J. S. York, 330 feet north and west of SE cor. of Section 322, Block 97, H & T. C. Survey.

Briscoe County

C. S. Rice's No. 1 J. C. Anderson, 330 feet north and west of SE cor. NW NW, Section 23, Block B-3, B. & S. F. Survey.

Brown County

Amerada Petroleum Corp. and others' No. 2 H. H. Henslee, 525 feet north and 150 feet east of SW cor. H. H. Henslee's 200-acre tract out of Patrick Curlong Survey, No. 151. Anna Belle Oil Co.'s No. 9 Kilgore Brothers, 1,350 feet north and 1,600 feet east of SE cor. of east half of Hugh McClure Survey, No. 153. Empire Gas & Fuel Co.'s No. 2 J. W. Newton, 450 feet north and 150 feet east of SW cor. of J. W. Newton's 240-acre tract out of Mrs. J. M. Harris Survey, No. 784. Florence Oil Co.'s No. 4 John Newton, 150 feet south and east of NW cor. of J. W. Newton's 160-acre tract out of Patrick Curlong Survey, No. 151. J. K. Hughes' No. 4 J. W. Shore, 1,050 feet south and 150 feet east of NW cor. of J. C. Ryan Survey, No. 635; No. 5, 1,350 feet south and 150 feet east of NW cor. of the same survey; No. 6, 1,650 feet south and 150 feet east of NW cor. of the same survey; No. 7, 150 feet south and 450 feet east of NW cor. of the same survey; No. 8, 150 feet south and 750 feet east of NW cor. of the same survey. Nichols and others' No. 1 Mrs. S. M. Hamilton, 150 feet west of the middle of the east line of west 30 acres of south 60 acres of S. M. Hamilton's 100-acre tract out of Mrs. William English Survey, No. 791. The Texas Company's No. 40 Mrs. R. M. Lowe, 150 feet north and 750 feet east of SW cor. of their 320-acre lease out of George Stubblefield Survey, No. 622.

Callahan County

Gibson & Johnson's No. 1 I. N. Jackson, 660 feet north and west of SE cor. of NE NW, Section 15, E. T. R. R. Survey.

Clay County

H. R. Howard's No. 1 J. Wetsel, 400 feet south and 250 feet west of NE cor. of J. Wetsel's 40-acre tract out of B. B. B. & C. Survey, No. 1 A-54. Empire Holding Corp.'s No. 1 John Barry, Jr., 1,570 feet north and 1,735 feet west of SE cor. of Section 2,642, T. E. & L. Survey, being 465 feet south and 150 feet east of NW cor. of Lot 15; No. 2, 1,570 feet north and 1,435 feet west of SE cor. of Section 2,642, T. E. & L. Survey, being 465 feet south and 450 feet east of NW cor. of Lot 15.

Coleman County

Don L. Daugherty's No. 1 S. W. Mullanax, 150 feet south and 1,320 feet east of NW cor. of SW, Section 5, T. & N. O. Survey. White Eagle Oil & Refining Co.'s No. 2 J. Fox Casey, 200 feet south and east of NW cor. Lot 4, H. Crocheron Survey, No. 657.

Comanche County

Mid-Kansas Oil & Gas Co.'s No. 1 W. F. Waldrop, 250 feet north and 1,18[illegible] feet east of SW cor. of W. F. Waldrop 275-acre tract out of W. Demoss Survey.

Cooke County

Fain-McGaha Oil Corp.'s No. 1 J. W. Chaffin, 150 feet south and west of NW cor. of W. C. Davis Survey, A-308, and located in E. Reed Survey, A-849. Oil Operators Trust Co.'s No. 3 M. J. Klein, 450 feet south and 150 feet east of NW cor. of Block 60, Town of Muenster.

Cottle County

Sun Oil Co.'s No. 1 L. T. Burnett, center of NW SE, Section 6, Block L, S. P. R. R. Survey.

Eastland County

Chestnut & Smith's No. 2 T. L. King, 490 feet south and 1,255 feet west of NE cor. of west two acres of SE Section 5, Block 3, same survey.

Fisher County

Ideal Oil Co.'s No. 1 Jameson, 1,310 feet north and west of SE cor. of Section 111, Block 1, same survey.

Haskell County

Blackstone Oil Co.'s No. 1 C. D. Grissom, 1,320 feet south and east of NW cor. of W. J. Montgomery Survey, No. 12.

Howard County

Donolee and others' No. 1 Martin, 150 feet north and west of SE cor. Section 4, Block 33, Township 2n, T. & P. Survey. Lockhart & Carey's No. 3 Otis Chalk, 990 feet south and east of NW cor. of Section 114, Block 29, W. & N. W. Survey; No. 2 Otis Chalk-A, 1,32[illegible] feet north and 1,820 feet east of SW cor. of Section 95, Block 29, same survey.

Jack County

Eastern Petroleum Corp.'s No. 4 Mrs. M. D. Snedeker, 150 feet north and 75[illegible] feet west of SE cor. of south 20 acres of Lot 7, J. Robbin Survey, A-490. Empire Holding Corp.'s No. 1 Mrs. M. D. Snedeker, 150 feet south and west of NE cor. of the W half of Lot 9, same survey.

Montague County

Barnsdall Oil Co.'s No. 5 N. J. Howard and others, 750 feet south and 15[illegible] feet west of NE cor. of their 30-acre lease out of J. Chambliss Survey, A-12[illegible] A. O. Davis and others' No. 1 Abe Molsbee, Jr., 150 feet north and 550 feet west of SE cor. of Abe Molsbee's 85-acre tract out of T. Dean Survey, A-180. The Texas Company's No. 3 N. J. Howard and others-C, 150 feet north and 475 feet east of SW cor. of their 40-acre lease "C" out of J. Chambliss Survey, A-123.

Pecos County

World Oil Corp.'s No. 1 M. Cerf, 2,31[illegible] feet south and west of NE cor. of Section 10, Block 130, T. & St. L. R. R. Survey. Humble Oil & Refining Co. and Kirby Oil Co.'s No. 1 J. T. McElroy, 2,310 feet southwest of northeast line and 990 feet northwest of southeast line of Section 124, Block 10, H. & G. N. Survey.

Throckmorton County

Humble Oil & Refining Co.'s No. 3 M. K. Graham, 690 feet north and 200 feet east of SW cor. NW Section 992, T. E. & L. Survey. H. L. Parker and others' No. 1 J. A. Mathews, 660 feet north and east of NW cor. of Section 3, A. B. & M. Survey, Block X, and located in G. C & S. F. Survey, No. 2, A-1,402.

Upton County

Roxana Petroleum Corp.'s No. 24 Dell[illegible]

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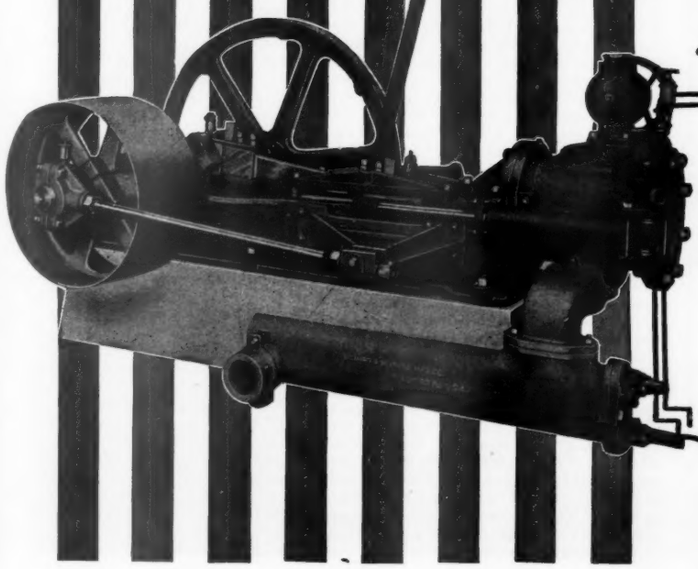

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Bowen, 990 feet north and 1,650 feet west of SE cor. of Section 6, G. C. & S. F. Survey, A-1,057; No. 25, 1,650 feet north and west of SE cor. of Section 6, same survey; No. 26, 1,075 feet south and 990 feet east of NW cor. Section 6, same survey; No. 27, 2,255 feet south and 1,650 feet west of NE cor. of Section 6, same survey; No. 28, 1,595 feet south and 2,210 feet west of NE cor. Section 6, same survey.

Wichita County

Magnolia Petroleum Co.'s No. 45 Beach-Staley, 775 feet north of the south line and 50 feet east of the west line of their 80-acre lease out of C. T. & R. R. Survey, No. 4, A-443. Bridwell & Heydrick's No. 1 C. Frankl and others, 150 feet south and east of NW cor. of south 65 acres of north 117 acres of Block 328, Waggoner Colony Lands. C. H. Clark and others' No. 2 W. T. Waggoner, 150 feet south and 2,310 feet east of NW cor. of Section 33, Block 5, H. & T. C. Survey; No. 3, 490 feet south and 4,360 feet east of NW cor. of the same section. L. P. Hammond's No. 2 J. F. Boyd, 300 feet south and 70 feet east of NW cor. of Lot 19, and located in Lot 17, Block 50, Kemp's Wichita Valley Lands; No. 3, 150 feet south and east of NW cor. of Lot 19, and located in Lot 17, same 50 acres; No. 4, 1,520 feet north and 2,035 feet west of SE cor. of the same 50 acres. Petroleum Producers Co.'s No. 1 W. N. Chilson, 150 feet south and 1,050 feet east of NW cor. of Section 7, League 4, Denton County School Land, A-417. The Texas Company's No. 324 W. T. Waggoner, 5,000 feet south and 1,008 feet west of NE cor. of John Bradley Survey, A-13, and located in Seale & Morris Survey, No. 2, A-535. A. T. Wolfe's trustee, No. 1 E. Daume (Coble), 150 feet south and 1,170 feet west of NE cor. of Section 1, S. P. R. R. Survey, A-266.

Wilbarger County

L. H. Cullum and others' No. 1 G. B. Ancell, 150 feet south and west of NE cor. of west 65 acres of north 85 acres of the E half of Section 3, Block 7, H. & T. C. Survey. Milham Corp.'s No. 14 W. T. Waggoner-B, 450 feet south and 1,350 feet west of NE cor. of their 320-acre lease out of Section 31, Block 4, same survey. North Vernon Oil Co.'s No. 1 J. E. Lutz, 150 feet north and east of SW cor. of north 24 acres of E. Lutz' 320-acre tract out of Section 39, Block 12, same survey.

Young County

C. B. Jetter and others' No. 1 J. R. Garvey, 150 feet north and west of SE cor. of south 20 acres of west 40 acres of south 50 acres of the W half of Section 1,857, T. E. & L. Survey. Panhandle Refining Co.'s No. 7 Mrs. O. W. Mathews, 750 feet south and 150 feet east of NW cor. of their 75-acre lease out of A. Rohus Survey, A-240. The Texas Company's No. 1 W. C. Leberman, 450 feet south and east of NW cor. of Section 154, T. E. & L. Survey. Jacob Oil & Gas Co.'s No. 1 Isaac Sayers, 2,800 feet due west of SW cor. of D. M. Russell Survey, A-1,944, and located in Margaret Edmonds Survey, A-91. Monroe Production Co.'s No. 1 V. M. Chambers, 200 feet north and east of SW cor. of north 80 acres of NW Section 2, T. & N. O. Survey, A-2,171.

THE HOUSE-HEATING NATURAL GAS LOAD

(Continued from Page 74)

of gas used in furnaces, so that in late years in the major companies of the Gas Service Co. group, little or no gas was used for central house heating purposes.

Preparations for Selling House Heating

It was felt that with a properly designed rate structure and the promotion of the gas house heating business along scientific lines, this load could be again secured, the cost to the customer for heating being approximately the same as with other fuels, and the rate for gas being such that a very good return would be made to the gas company for the load attached. This is fundamentally a selling problem, to be handled by a well-trained selling organization.

The first consideration given by the Gas Service Co. in entering the house-heating program two years ago was the rate under which house heating would be sold. The three-part rate form was felt to be the most just and equitable rate to the customer and to the company. This rate is coupled with the use of the demand limiting meter, in which the customer has reserved for his use a predetermined maximum demand which is necessary to adequately take care of his requirements. In the Kansas City companies, permission was obtained from regulatory bodies to secure 2,500 house-heating customers under the three-part rate. The average return per 1,000 feet from the rate schedule is approximately 7[illegible] cents. In several other cities, the house-heating program was carried under the three-part rate, while in others, the present domestic rate was used, which averages upwards to 70 cents per 1,000.

The second step taken was organizing and training the new business department or selling organization to secure the house-heating load. Briefly, the actual selling work was carried on by our new business representatives, who secured the prospects and interested the customers in securing an estimate of what it would cost to heat their homes with gas. Working with these new business representatives is a corps of trained house-heating engineers. These engineers make a survey of the premises and the present heating plant and, from this survey, work up and furnish the new business department representative with the information as to the estimated annual cost of heating, and recommendation of the necessary equipment to be installed. With this complete information at hand the new business representative is prepared to complete the sale to the customer.

To enable customers to conveniently purchase and finance a gas house heating installation, a convenient long term payment policy is used. The general terms of time payments are 5 per cent of the purchase price of the gas house heating equipment installed in the customer's home with the order, the balance in 24 equal monthly payments. A cash discount of 5 per cent was allowed on the purchase price of the gas installation on accounts paid in full within 30 days of date of the installation. Through this time payment plan, customers can purchase a house-heating installation without hardships and it will be interesting in this connection that the losses from bad debts have been exceedingly small.

Selection of Equipment

In promoting the house-heating load, the question arose whether our efforts would be confined entirely to the sale of gas designed house-heating furnaces and boilers, or whether conversion burners would be included in this program. It is generally conceded by those who have had any experience with the problems of gas house heating that the ideal installation is the gas-designed central house-heating plant; the properly selected and installed gas-designed equipment insures the lower operating cost with added service, safety and convenience.

The homes of this country are now furnaced with coal-designed equipment, which in the aggregate represents a tremendous investment. The selling of a gas-designed house-heating plant to replace this coal-designed equipment represents one of the big obstacles which is encountered in securing the maximum results in the promotion of the gas house heating at a mimimum of expense. In the Gas Service Co. group, conversion installations were included in the general house-heating program, and the majority of installations made were the installations of conversion burners.

Value of Conversion

A number of features favor the use of conversions in a general program, although some complicated problems are encountered. Conversion installations are of low initial cost, and their greatest value in house heating activities is the price consideration to the customer. Through conversions the customer can be

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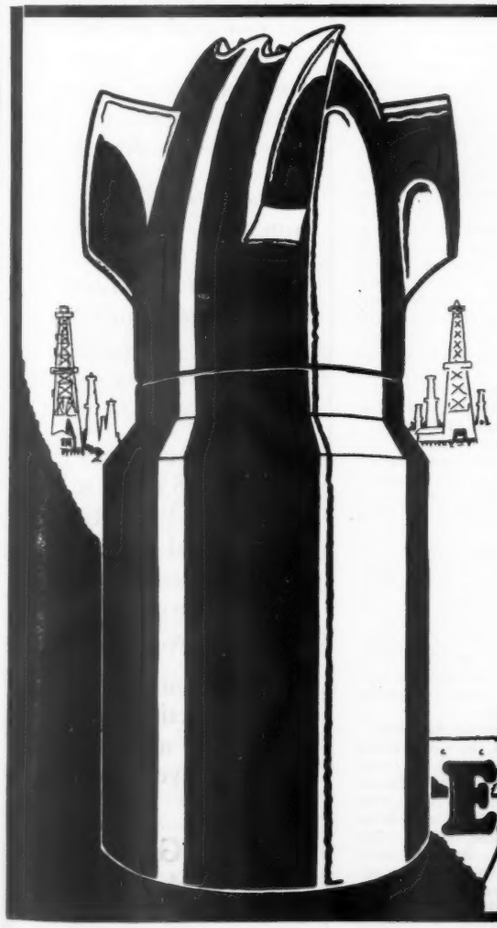

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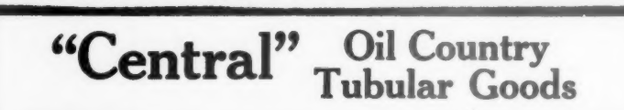

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reached who is unwilling or unable to make a large investment in gas-designed apparatus and dispense with a present good coal furnace. The renter also is reached, who desires equipment of low cost which is durable and capable of being conveniently reinstalled.

No difficulty was experienced in the selection of high-grade and efficient gas-designed hot air furnaces and boilers for the house-heating program, as there are many such now on the market; however, we encountered a rather large and difficult problem in the securing of good conversion apparatus. This problem consisted chiefly in securing a conversion installation of low initial cost with good efficiency in the application of gas, including flexibility in application to various sizes, and also flexibility in adjustment to predetermined maximum hourly gas demand requirement for a given installation.

In order to study the conversion problem and secure first-hand knowledge of the variety of equipment on the market, the Gas Service Co. established a laboratory for testing the many kinds and types of apparatus on the market, under supervision of competent engineers. In connection with this laboratory, coal-designed furnaces were used which represents as nearly as possible the type which is found in the average customer's home; that is, the most efficient furnace on the market was not selected, but a medium low-priced furnace which is used largely in this territory.

The results of these tests showed that many types of apparatus incorporate no features which tend to improve efficiencies, while others incorporate one or more features which tend to improve the conversion installation. In many of the burner designs, no provision was made for adjusting the burner for the gas demand requirement of a heating installation. As a result of these tests, in order to have equipment to meet a variety of conditions, the Gas Service Co developed a high-type conversion apparatus, using the principles of radiant heat, through which high average efficiencies have been secured.

Where the demand rate system is used in connection with a house-heating program, it is absolutely essential that the conversion equipment be so designed that adjustment setting can be made to the predetermined maximum hourly gas demand requirement to be used for a given installation. If the burner can not be set for a given predetermined maximum demand, the customer may on the colder days take a larger demand than is consistent in heating his home, resulting in greatly lowering the efficiencies of the conversion installation and the jeopardizing of general service where a large number of such types of conversion installations are made. Whether or not a demand rate system is used, the feature of adjustment of burners to a predetermined maximum hourly gas requirement for a given installation appears very desirable.

Large Capacity Gas Heaters

In the smaller cities served by the Gas Service Co. group, a large percentage of the homes have no basements or central heating plants. Heating is done with base-burner coal stoves and small-room heaters.

To meet these conditions and render a complete gas-heating service to our customers, a large capacity gas room heater was selected. These heaters are constructed for radiant fuel effect, completely enclosed and vented. They have sufficient capacity to heat two or three rooms comfortably and safely, and have proven very popular with the customers having homes without basements.

Results of House-Heating Activity

The gas companies of the Gas Service Co. group during the year 1926 were successful in selling 3,813 central house-heating installations, of which 3,266 were conversion installations, the balance being gas designed furnaces and boilers. The majority of installations included automatic heat regulators, thus giving an automatic house temperature control and real heating service. In addition, 2,047 large capacity gas heaters of enclosed

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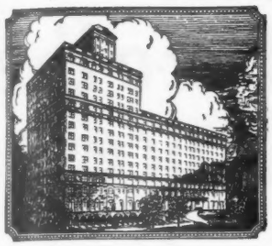

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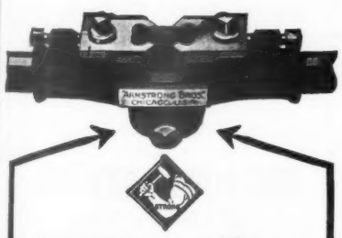

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type were sold. Considering that the average annual load added from a house-heating installation is approximately 140,000 feet and from a large capacity gas heater approximately 50,000 feet, it will be seen that approximately 600,000,000 feet of increased annual consumption has resulted from the sale of the above house-heating installations and the large capacity room heaters. It is estimated that these house-heating installations sold in 1926 will reflect an increase of at least $400,000 in annual gross revenues.

Problems Encountered

The biggest difficulty encountered is the many homes which are underfurnaced, and it is not unusual to encounter poorly designed coal-heating plants. The installation of gas in homes which have inadequate sized heating plants and insufficient radiation or hot air capacity, will result in high bills or inadequate heating. It is not unusual to find a customer who thinks that the installation of gas in his furnace will cure his heating difficulties, when it is primarily the fault of the furnace or heating installation.

Under the policy which has been pursued in the promotion of this business through the new business department of the Gas Service Co, every heating installation is carefully checked by the house-heating engineers. Where deficiencies in the furnace or installation are found, such are brought to the attention of the customer by the salesman who has the engineer's report. If the furnace is undersized, a conversion installation will only result in a high bill and a conversion is discouraged. In this instance, effort is made to sell a gas designed furnace which is set in parallel with the present coal installation. In the case of a hot air furnace, the old furnace is usually moved over and the gas furnace placed in the position of the old coal furnace, serving as a primary unit, and the coal furnace connected to the gas furnace by means of a connecting yoke and damper. The efficient use of gas is then secured and the coal furnace is still connected to be used in case of emergency.

Where conditions are such that adequate heating can be had by changes in the plant installation and heating ducts or radiators, this is outlined and included in the estimate which is presented to the customer. Such work is usually supervised by the gas company and subcontracted to local heating contractors.

In the carrying out of a large house-heating program, a large variety of conditions will be encountered with many problems to be solved, but with a capable engineering organization as a part of the selling organization, such problems are usually successfully handled and the customer is given efficient heating service for gas used.

The promotion of the house-heating load is a selling problem. You are competing with the oil-burner man and with the coal man, but through the superior fuel and the intelligent application of this fuel to the customer's heating problem, the house-heating load can be secured. A well-organized, well-paid selling organization can accomplish these things through continued effort, and the gas companies will reap the reward in rapid addition of load which will stay sold to satisfied users.

HOMINY SAFETY CLUB FIRST OF ITS KIND

By Ray E. Miller
Manager Safety Department, Marland Oil Companies, Ponca City, Okla.

A new departure in organized accident prevention work in the petroleum industry was undertaken at Hominy, Okla., three months ago by the formation of the Hominy Safety Club, and subsequent meetings indicate that the organization can and will perform a real safety service in southeastern Osage County.

Last summer while the writer (then safety director of the Petroleum Safety Council of the Mid-Continent Oil and Gas Association) was holding a series of foreman's safety meetings throughout the Mid-Continent fields, the question of community safety organizations through

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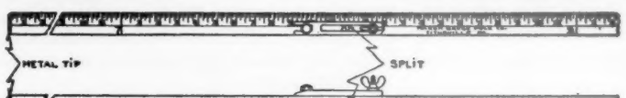

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which operating companies could exchange ideas and experience on safety and operating problems was often discussed. Superintendents and foremen in the producing and pipe line divisions of many fields seemed to feel the need of such a forum but it remained for the men around Hominy to take the initiative and give the idea a thorough trial.

An invitation was extended to all companies operating in that district to attend the regular monthly Marland employe safety meeting on January 26, 1927. Some 50 men from 10 or 12 different companies attended and voted unanimously to perfect an organization. C. B. Houston, of the Atlantic Oil Producing Co. and W. J. Novack of the Continental Oil Co., who were leaders in arousing interest in the idea were immediately elected president and vice president, respectively, and J. L. Steible of the Marland Oil Co. was made secretary and treasurer. It was agreed that regular meetings should be held on the last Tuesday of each month, and organization committees were appointed.

At the second meeting, February 22, the officers were made permanent and the following board of directors elected: Thomas Kinney, Sinclair Pipe Line Co., R. R. McAlister, Cosden Pipe Line Co., G. W. Sliger, Gypsy Oil Co., O. A. Quarnstrom, Marland Oil Co., Samuel Peters, McCulloch Oil Co., F. R. McDougal, Tidal Oil Co., W. H. Wilson, Indian Territory Illuminating Oil Co., E. R. McIntyre, Twin State Oil Co., and R. D. Schaffner, Valley Osage Oil Co. Constitution and by-laws were adopted, dues fixed and standing committees appointed. The purpose of the club was declared to be the promotion of public and home safety and the prevention of occupational accidents.

In addition to general round-table discussion at each meeting, the club hopes to have speakers from the executive ranks and safety departments of the various companies.

These men have declared it is their belief that interest engendered by intercompany group meetings will be reflected by a lessening of accidents and property destruction.

UNIVERSITY LEASES IN TEXAS LITIGATION

AUSTIN, Tex., Apr. 16.—According to J. T. Robison, Land Commissioner, controversy continues as to mineral leases and oil and gas permits on school and university lands and production has been pinched to a minimum on these leases pending decisions by the higher courts. He also said that under the act of 1925 the university would get $2,000,000 or $3,000,000 from its oil and gas leases, but that the law is under fire in the courts and the regents are attacking it through an intervention plea.

Commissioner Robison said he had visited the Yates lease in Pecos County where there are three producing wells, one estimated at 6,800 bbls. a day, while there are some 20 wells on the Whittenberg lease in Hutchinson County. All of these will produce handsome royalties to the school fund, the commissioner said, once they are permitted to flow their maximum output. These leases are attacked in suits in Travis County by the Attorney General, who seeks to recover all the oil produced. A mandamus case styled Green against the commissioner is pending in the Supreme Court and involves the same constitutional question.

In all three of the last proceedings the Attorney General takes the position that the Legislature did not have the legal power to relinquish fifteen-sixteenths of the oil and gas to the owner of the land and that all such mineral is the property of the school fund. These cases are yet to be tried. If it should be held that the Legislature was not empowered to relinquish fifteen-sixteenths of the oil and gas, thousands of acres of valuable oil leases would be placed in jeopardy.

The Thissen and Frank mandamus suits involve valuable leases on university lands in Upton and Crane Counties. Thissen sought to acquire the leases at

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10 cents an acre under the act of 1917 and was refused because the Land Commissioner holds the act of 1925 is valid. It permits the Land Commissioner to sell oil and gas leases on university lands to the highest bidder with minimums of 25 cents to 50 cents an acre.

"The regents intervened in support of the act of 1917," said Robison, "and that was most surprising to me for under the act of 1925 I could sell the leases to the highest bidder and easily obtain between $2,000,000 and $3,000,00 more for the university than under the act of 1917 at 10 cents an acre."

Robison, with the aid of Judge R. L. Batts, will contend for the validity of the act of 1925 as to the university lands and also the Legislature had the right to relinquish fifteen-sixteenths of the oil and gas on school lands to encourage development, the state tanking the remainder as royalty.

Only about 12,000 acres of land are affected by the three mandamus cases brought in the Supreme Court, Robison said. They attack forfeitures and resale of land by the commissioner where he failed to reclassify and revalue and advertise the lands before reselling. The reason no greater acreage is involved is because the special session of last October validated all titles questioned under such resale, the commissioner said. The coming special session could repeat for the sales not in litigation, if the Governor submits the subject.

EXPECT BIG ATTENDANCE AT SCOUTS' CONVENTION

From 400 to 600 scouts are expected to attend the fourth annual convention of the National Oil Scouts Association in Dallas, Tex., May 23 and 24, according to Harry M. Sample, president of the association. A semi-technical program has been arranged including papers covering production, acreage prices, and developments in all districts of Texas, Arkansas and Louisiana. These papers are now being prepared under the supervision of the various members of the executive committee and will be presented at the meeting in Dallas. They will be especially valuable in giving the assembled scouts a picture of oil development in the state as a whole and are expected to be a great help to scouts who are transferred from one district to another on short notice. These papers will also be unique in presenting the various fields from a new angle, that of the man who actually "sits on the well" from day to day and is in closer touch with developments in the field than perhaps any other in the business.

The selection of Dallas as the 1927 convention city, according to Mr. Sample, was to a large extent a bid for attendance by Oklahoma and Kansas scouts, and many of these are expected to be present. Dallas can be reached overnight from Tulsa and many other scout headquarters in Oklahoma, and this combined with a practical program of benefit to the scouts themselves is expected to bring at least 400 visitors to the convention.

TAX DECREASES SALES

HOUSTON, Tex., Apr. 16.—The tax of 3 cents per gallon on gasoline passed by the last legislature, and which went into effect March 21, is said to be responsible for a decrease in sales, according to officials of the major oil companies. They state there has been a marked decrease in sales at filling stations since the tax became operative.

However, it is believed the decline is only temporary and that the automobile owners will soon become accustomed to the increase, which is collected by the dealers.

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Detailed Operations in All Fields for Month of March

SUMMARY OF ALL FIELDS

Field—	Comp.	Prod.	Dry	Gas
Eastern	351	2,230	34	56
Central Ohio	33	415	9	16
Lima	21	162	2	1
Michigan	24	860	1	0
Indiana	18	355	6	3
Illinois	13	226	2	0
Kentucky	80	2,146	13	2
Tennessee	4	435	0	0
Kansas	151	11,427	62	6
Oklahoma	386	146,824	113	44
N. and W. Texas	475	43,924	167	4
Texas Panhandle	80	19,972	5	7
East Central Texas	1	6	1	0
Gulf Coast	100	47,014	41	1
Southwest Texas	87	901	36	22
Arkansas	47	1,309	15	6
Louisiana	72	2,879	39	12
Wyoming	45	25,066	8	0
Montana	12	848	4	0
Colorado	9	712	2	0
New Mexico	3	375	4	0
Total March	2,082	307,180	564	180
Total February	1,900	301,889	503	123
Difference	182	5,291	61	57

Summary of New Work

Field—	Rigs	Drg.	Ttl.
Eastern	123	409	532
Central Ohio	12	47	59
Lima	7	34	41
Michigan	17	28	45
Indiana	4	57	61
Illinois	2	29	31
Kentucky	10	158	168
Tennessee	2	25	27
Mississippi	12	16	28
Alabama	0	6	6
Florida	2	11	13
Kansas	76	301	377
Oklahoma	263	1,263	1,526
N. and W. Texas	119	893	1,012
Texas Panhandle	93	385	478
East Central Texas	0	25	25
Gulf Coast	58	233	291
Southwest Texas	41	161	202
Arkansas	20	62	82
Louisiana	49	103	152
Wyoming	22	259	281
Montana	11	127	138
Colorado	7	92	99
Utah	3	38	41
New Mexico	11	130	141
Total March	964	4,892	5,856
Total February	1,158	4,768	5,926
Difference	194	124	70

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	13	1,428	3	0
Creek	58	12,677	27	6
Garfield	6	560	1	0
Grady	27	2,517	2	9
Kay	26	5,483	4	4
Muskogee and Wagoner	16	346	11	3
Nowata	6	52	0	0
Okfuskee	12	957	6	4
Okmulgee	29	708	9	6
Osage	45	7,794	12	5
Payne	8	245	1	2
Pawnee	10	352	2	1
Stephens & Cotton	6	60	3	0
Seminole	78	101,684	13	1
Tulsa	19	1,099	8	1
Miscellaneous	27	10,862	11	2
Total March	386	146,824	113	44
Total February	348	132,924	96	25
Difference	38	13,900	17	19

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Carter	9	61	70
Creek	39	124	163
Comanche	0	9	9
Garfield	2	30	32
Grady	6	87	93
Hughes	2	26	28
Kay	4	73	77
Lincoln	2	17	19
Logan	2	9	11
Muskogee & Wagoner	11	29	40
Okfuskee	13	33	46
Okmulgee	16	35	51
Osage	20	62	82
Payne	0	18	18
Pawnee	9	26	35
Pontotoc & Garvin	8	25	33
Pottawatomie	8	52	60
Seminole	90	400	490
Stephens & Cotton	7	48	55
Tulsa	0	19	19
Oklahoma, Panhandle	0	13	13
Miscellaneous	15	67	82
Total March	263	1,263	1,526
Total February	367	1,204	1,571
Difference	104	59	45

CARTER COUNTY

19-1s-3w W. Hardin, Magnolia Pet. 3 ... 744
2-2s-3w Calvery, Humble O. & R. 3 ... 125
3-2s-3w Pruitt, Wirt Franklin and the Prairie 7 ... 15
Smith, Skelly Oil 3-A ... 70
16-2s-2w Wilson, Magnolia Pet. 5 ... 20
3-2s-3w Adams, Magnolia Pet. 8 ... 95
21-2s-3w Zachery, Magnolia Pet. 1 ... 57
34-1s-3w Newstadt, Magnolia Pet. 7 ... 134
10-2s-2w Noble, Magnolia Pet. 1 ... dry
15-2s-2w Ed and G. Cox, Magnolia 3 ... 25
17-2s-2w Moore, Skelly Oil 2 ... 143
26-2s-2w Simpson, Westheimer 1 ... dry
26-2s-2w Simpson, Max Westheimer 1 ... dry

Wells completed ... 13
Production ... 1428
Dry ... 3

CREEK COUNTY

8-18- 7 Vance, Magnolia Pet. 21 ... 25
Starr, Silurian Oil 12 ... 18
16-18- 7 Coker, Magnolia Pet. 1 ... 120
20-17- 8 ——, Transcontinental Oil 2 ... dry
22-16- 8 Arsoyalee, Peters Pet. 3 ... dry
25-15- 7 Charles, Phillips Pet. 3 ... gas
23-14- 8 Hemmet, C. G. Tibbens 1 ... 100
18-19- 9 Sewell, Roxana Pet. 2 ... 722
28-18-11 Fife, Selby O. & G. 1 ... dry
9-18-12 White, Tibbons 9 ... dry
22-17- 9 Harjoche, T. C. & O. Co. 2 ... dry
12-17-10 Turner, W. H. Elson 1 ... 1100
16-17-11 Broadnox, Misener & Reesman 4 ... 30
20-15- 9 Fobes, C. G. Tibbens 1 ... gas
20-14-10 Scott, R. D. Donnelly et al 2 ... 240
6-18- 7 Rector, Prairie O. & G. 41 ... 100
15-17- 7 Stewart, Mid-Cont. Pet. 28 ... 25
16-17- 8 Scruggs, Burk-Greis Oil 1 ... 360
16-17- 8 Gooden, Love & Wolfe 1 ... dry
5-17- 8 Riverbed, Riverside Oil 3 ... 60
16-17- 8 Scruggs, Transcontinental O. 1 ... 320
33-18-11 Sapulpa, Thompson, Black and Roxana Pet. 1-A ... dry
6-18-12 Townlot, Sunray Oil Corp. et al 1 ... 5172
10-17- 9 Lindsey, Wilcox O. & G. 4 ... 110
17-19- 9 Murrell, Redister Oil 4 ... gas
35-18-10 Thompson, Radcliff et al 1 ... 25
6-18-12 Townlot, Savoy et al 1 ... dry
Townlot, Savoy et al 1 ... 2000
Townlot, Sunray Oil et al 1 ... 1520
Townlot, Sunray Oil et al 1 ... dry
13-17-10 Joconton, McCullough Oil 2 ... dry
28-17-10 Tiger, R. C. Wilson 1 ... dry
4-17-11 Barnes, Peters Pet. Co. 2 ... gas
8-17-11 Freeman, G. M. Ireland 9 ... gas
18-17-11 Sparks, J. R. Cole 2 ... 10
31-15- 9 Fridey, Mid-Cont. Pet. 1 ... 15
R. Lucas, C. G. Tibbens 5 ... 20
F. Lucas, C. G. Tibbens 4 ... gas
2-14-10 Milliken, Devonian Oil 1 ... dry
18-17-11 Meyer, Cumberland Oil 3 ... 20
Berryhill, Cumberland Oil 1 ... dry
11-17-11 Davis, Kurell Oil & Gas Co. 7 ... dry
32-17-10 Yellowhead, Skelly Oil 3 ... 250
24-27-10 Tahkaney, J. H. Wright 13 ... 25
11-17-10 Unallotted, O. M. Irelan 2 ... dry
9-17-10 Charcoteana, Continental Oil Co. 1 ... dry
4-17-10 Johns, McCulloch Oil Co. 1 ... dry
2-17-10 Johnson, The Texas Company 1 ... dry
6-18-12 Townlot, Sunray Oil et al 1 ... dry
Townlot, Savoy Oil Co. 1 ... dry
Townlot, Kolb et al 1 ... dry
5-18-12 Sizemore, William & Wood 1-A ... dry
31-19- 9 Gooden, C. L. McMahon 1 ... dry
28-18-11 D. Fife, Selby O. & G. Co. 1 ... dry
1-19- 8 Asbury, J. B. Grieves 1-A ... dry
16-17- 8 Morrison, Shaffer O. & R. 3 ... 290
23-16- 8 Peters, T-C-M Oil Co. 1 ... dry
25-15- 8 Herrod, C. G. Tibbens 4 ... dry

Wells completed ... 58
Production ... 12677
Dry ... 27
Gas ... 6
Gas production ... 93,050,000

GARFIELD COUNTY

18-22-3w Hartley, Sinclair Oil 54 ... dry
13-22-4w Walker (N), Sinclair Oil 29-A ... 165
Walker (S), Sinclair Oil 71 ... 330
24-22-4w Walker (S), Sinclair Oil 28 ... 25
Boggs, Champlin Refg. Co. 35 ... 35
19-22-3w Kisner (W), Sinclair Oil 40 ... 5

Wells completed ... 6
Production ... 560
Dry ... 1

GRADY COUNTY

35-5-8w Smith, Magnolia Pet. 1 ... gas
11-4-8w Williams, Meridian Gas 2 ... gas
16-3-5w Kayser, Gypsy Oil 2 ... 100
Smith, Hannon & Cox 2 ... 5
21-3-5w White, Carter Oil 1 ... 100
27-3-5w E. Kilgore, Clark & Cowden 1 ... 75
34-3-5w Wham, Carter Oil 7 ... 100
E. H. Mitchell, Magnolia Pet. 2 ... 75
35-3-5w Lindsey, Carter Oil 4 ... 200
3-4-8w Gardner, Berry et al 1-A ... gas
25-5-8w Serrato, Nicholos Drlg. Co. 1-A ... gas
26-5-8w Smith, Oklahoma Natl. Gas Corp. 3 ... gas
19-5-7w Thomas, Empire G. & F. Co. 1 ... dry
11-4-8w Rockhold, Magnolia Pet. 2-B ... gas
8-3-5w R. Horton, Carter Oil 2 ... 92
9-3-5w Propp, Marland Oil 1 ... 65
16-3-5w Walford, Carter Oil 2 ... 300
M. Walford, Carter Oil 3 ... 140
17-3-5w Burkes, Marland Oil and Joe Ray 1 ... 65
27-3-5w W. E. Polson, Carter Oil 1 ... gas
Kilgore, Clark & Cowden 4 ... 500
Kilgore, Clark & Cowden 5 ... 175
Adair, Critchlow et al 4 ... 1500
E. Polson, Magnolia Pet. 2 ... gas
16-3-5w Dolen, Carter Oil 1 ... 25
21-4-6w Tucker, Carter Oil and Frates & Nash 1 ... dry
11-4-8w Pettitt, Watchorn O. & G. 3 ... gas

Wells completed ... 27
Production ... 2517
Dry ... 2
Gas ... 9
Gas production ... 111,500,000

MUSKOGEE AND WAGONER COUNTIES

14-16-16 Lunnon, M. E. Johnson 1 ... gas
30-15-15 Vandersliee, Culp et al 7 ... dry
20-15-18 Alice Robertson, Whaley & Lang 2 ... dry
30-15-15 Grayson, Vise & Heflin 3 ... dry
31-15-15 Drew, E. A. Hutchinson 6 ... dry
35-19-15 McIntosh, J. F. Hoff 1-A ... dry
13-17-16 Atkins, W. C. Newman 1 ... gas
36-16-17 Ballard, R. F. Ray et al 1 ... dry
17-15-17 Manuel, E. E. Williams 6 ... dry
26-15-17 Lewis, W. R. Sommerville 1 ... dry
18-15-16 Harrison, J. G. Tilley 2 ... dry
17-15-17 Monday, W. R. Sommerville 1 ... 150
32-15-18 Meagher, Jolly-Ogg Oil 5 ... dry
4-17-16 McIntosh, Ted Ray Oil 3 ... 196
2-16-16 Smith, Mitchell Oil 4 ... dry
27-16-17 Lewis, H. H. Flescher 4 ... gas

Wells completed ... 16
Production ... 346
Dry ... 11
Gas ... 3
Gas production ... 16,581,000

KAY COUNTY

16-29-1w School land, Mid-Cont. Pet. 5 ... 742
21-29-1w Priboth, Comar Oil 14-W ... 168
8-28-1w Andrews, Wentz Oil Corp. 1 ... 1071
8-27-1w Jameson, Harris & Hahn 4 ... gas
1-26-2w Smith "A," Prairie O. & G. 9 ... 125
Smith "A," Prairie O. & G. 4 ... 757
16-29-1w School land, Mid-Cont. Pet. 6 ... 222
20-29-1w Day, Comar Oil 3-W ... 92
29-29-1w Judd, Comar Oil 1-B ... dry
21-29-1w Priboth, Comar Oil 13-W ... 434
17-29-1e Nixon, Carter O. and Ona O. 1 ... 116
Dickerson, Marland Oil 4 ... 60
Dickerson, Marland Oil 5 ... 75
Brockhouser, Vernon O. & G. 3 ... 137
8-28-1w Horne, Comar Oil 2-W ... 69
8-27-1w Harris, Globe O. & R. 1 ... 216
19-27-1w Gaylor, Marland Oil 1 ... gas
8-27-1w Mitmore, Otstot et al 1 ... 40
20-27-1e Buessing, Hag Oil 1 ... gas
1-27-2e Robinson, Geo, Miller 1 ... dry
12-26-2w North, Marland Oil 5-A ... dry
6-26-1w Glasgow, National Union Oil and Marland Oil 1 ... 747
North, Marland Oil 1 ... 200
15-25-2w Thomas, Marland Oil 7 ... dry
17-29-1e Shimp, Carter Oil and Ona O. 3 ... 212
16-27-1w Slocum, Otstot et al 1 ... gas

Wells completed ... 26
Production ... 5483
Dry ... 4
Gas ... 4
Gas production ... 10,000,000

NOWATA COUNTY

36-25-16 Campbell, Prairie O. & G. 19 ... 20
16-26-16 Newlin, J. Ed Oil Assn. 1 ... 1
24-26-14 Krisp, Burris & Presburg 2 ... 15
Pemberton, Mid-Kansas Oil 1 ... 10
4-25-17 Still, Echo Oil 1 ... 1
36-25-16 Campbell, Prairie O. & G. 20 ... 5

Wells completed ... 6
Production ... 52

OKFUSKEE COUNTY

28-13-11 Roberts, J. H. Rebold 2 ... dry
22-11-11 Holmes, Champlin O. & R. 2 ... dry
Holmes, Champlin O. & R. 5 ... 107
25-11-11 Barnett, Carter Oil 15 ... dry
16-11- 9 Micco, Sinclair Oil 1 ... gas
14-11-11 Jefferson, Champlin O. & R. Co. 1 ... 850
36-11-11 Detzler, W. L. Umborn 1-A ... gas
9-10- 9 Brown, McCullough Oil 1 ... dry
16-10- 9 Bruner, Independent O. & G. 1 ... gas
4-10-11 Barnett, Kingwood Oil Co. 1 ... dry
19-10-11 Lockhart, Morgan, Flynn and Roxana Pet. 2 ... dry
7-10-12 Fite, Atlantic O. P. Co. 2 ... gas

Wells completed ... 12
Production ... 957
Dry ... 6
Gas ... 4
Gas production ... 98,000,000

OKMULGEE COUNTY

22-15-11 Lee, Le Bean et al 4 ... 15
3-15-12 Arnold, Red Bank Oil 1 ... gas
9-15-12 Forty-four, C. McMahon 3 ... dry
4-14-11 Lundsford, Sidwell Drlg. Co. 2 ... dry
18-14-12 Holsell, White Eagle O. & R. 1 ... dry
32-13-11 Thomas, Denver P. & R. Co. 1-A ... dry
14-14-13 Blue, Gardner & Pine 1 ... gas
20-14-13 Lewis, E. L. King & Kyle 1 ... dry
27-14-14 Flint, J. C. Lampert 4 ... 5
4-11-13 L. Starr, W. B. Pine 1 ... gas
16-15-14 Alexander, McCulloch Oil 6 ... 60
28-16-12 Willis, Devonian Oil 1-A ... dry
33-15-12 Harjo, Sheridan Oil 1-A ... dry
4-14-12 Burton, W. B. Pine 1 ... 40
29-13-11 Milroy, Wigton, Long and Mid-Cont. Pet. 3 ... 60
25-13-11 Lewis, J. A. Swindler 11 ... 45
35-13-11 Lowe, Keaton & Gold 1 ... dry
3-11-12 Barnett, Eagle-Picher O. & G. 4 ... 1
17-15-13 Louiney, A. E. Kirkland & Son 3 ... 10
21-15-14 Carles, McCulloch Oil and Unger Bros. 7 ... dry
25-14-14 Sells, D. B. Meers et al 4 ... 15
17-12-13 Grayson, W. B. Pine 3 ... gas
16-13-12 Bruner, The Texas Company 14 ... gas
26-14-14 Flint, J. L. Selby 7 ... 6
28-13-14 Doyle, Elm Oil 3 ... 12
15-15-12 Marsey, T. A. Johnson 1 ... 70
9-15-12 Bighead, W. B. Pine et al 3 ... 75
20-16-14 Mayfield, X. K. Stout 4 ... 350
34-13-11 Porter, Lakeside Oil Co. 1 ... 25

Wells completed ... 29
Production ... 708
Dry ... 9
Gas ... 6
Gas production ... 28,250,000

OSAGE COUNTY

34-27- 6 Kewanee O. & G. 4 ... 900
Kewanee O. & G. 5 ... 2000
27-25- 8 I. T. I. Oil 358 ... gas
30-25- 8 The Texas Company 10 ... 75
3-22- 9 Edgington & Mallendore 7 ... 78
10-21-10 Mid-Kansas Oil 3 ... 30
21-21-12 Commercial Drlg. Co. 1 ... dry
32-20-10 Gled Oil et al 1 ... dry
27-27- 5 Mid-Kansas Oil 1 ... dry
12-27- 5 Phillips Pet. 9 ... 125
7-27- 6 Gypsy Oil 3 ... dry
28-27- 6 Gypsy Oil 3 ... 1500
Gypsy Oil 2 ... 20
34-27- 6 Kewanee O. & G. 2 ... 1400
20-26- 6 Phillips Pet. 8 ... 140
28-26- 6 Skelly Oil 10 ... 182
The Texas Company 5 ... 20
The Texas Company 7 ... 240
21-26- 6 Phillips Pet. 5 ... 200
28- 6- 6 Skelly Oil 8 ... 194
The Texas Company 8 ... 50
29-25- 8 The Texas Company 11 ... 270
26-25- 9 C. B. Peters 1 ... dry
31-25- 9 I. T. I. Oil 354 ... dry
20-23- 8 I. T. I. Oil 355 ... dry
29-24-11 I. T. I. Oil 360 ... gas
16-24- 4 Barnsdall Oil 1 ... dry
31-22-10 Peters Pet. Co. 1 ... 25
24-21- 9 Sand Springs Home 101 ... gas
14-21- 8 Pueblo Pet. Co. 2 ... 15
7-21-11 Skelly Oil 4 ... dry
15-21-12 Tidal Oil 12 ... 10
5-20-11 Pioneer Pet. Co. 8 ... 30
7-27- 6 Phillips Pet. 8 ... 70
23-27- 6 Carter Oil 3 ... 60
23-27-11 Delmar Oil 2 ... 15
30-27-12 Knupp Oil 1 ... dry
28-26- 6 Skelly Oil 9 ... 125
5-26- 7 Galt-Brown Oil Co. 1 ... dry
27-25- 8 I. T. I. Oil Co. 350 ... gas
I. T. I. Oil Co. 362 ... gas
29-25- 8 The Texas Company 4 ... 40
34-23- 9 M. & T. Oil Co. 3 ... 5
16-23-10 Mid-Continent Pet. 2 ... dry
7-21- 9 W. S. Mitchell 10 ... 75

Wells completed ... 45
Production ... 7794
Dry ... 12
Gas ... 5
Gas production ... 32,500,000

PAYNE COUNTY

31-18-4e McFeathers, Cushing G. & R. Co. 1 ... gas
12-19-1w Combs, Tidal Oil 1 ... 60
9-19- 5 Garr, Garr Oil 3 ... 40
21-19- 5 Moses, Olean Oil 1 ... 40
32-18- 4 Ballard, Skelly Oil 3 ... 200
31-18- 4 Thomas, Magnolia Pet. 1 ... dry
Parmele, Superior Oil 2 ... 838
22-19- 5 Garr, Twin State Oil 2 ... 5

Wells completed ... 8
Production ... 241
Dry ... 1
Gas ... 2
Gas production ... 16,500,000

PAWNEE COUNTY

32-20- 5 Berry, Magnolia Pet. 3 ... 40
33-24- 5 Hines, Mid-Kansas Oil 1 ... dry
27-23- 4 Brian, J. Donahoe et al 1-A ... gas
23-21- 7 Bailey, J. H. Markham, Jr., 6 ... 15
6-20- 5 Babcock, Stacey & Vaughn 1 ... dry
10-20- 6 Kline, Magnolia Pet. 1 ... 22
11-20- 6 Duff, Magnolia Pet. 1 ... 5
33-20- 5 Miner, Marland & Mid-Continent Pet. 2 ... 166
Sallee, Twin State Oil 1 ... 45
32-20- 6 L. Vogler, Magnolia Pet. 1 ... 45
Sallee, Twin State Oil 1 ... 65

Wells completed ... 10
Production ... 352
Dry ... 2
Gas ... 1
Gas production ... 9,000,000

STEPHENS AND COTTON COUNTIES

25-1-6w Barnes, Magnolia Pet. 1 ... dry
34-1s-8w Simpson "B," Big Twelve Oil 1 ... 15
29-2s-7w Johnson, Homaokla Oil 1 ... dry
30-1s-8w Skelly, Brigham, Beard & Cobb 5 ... 15
32-1s-8w Blaydes, Carter Oil 4 ... 30
5-2s-8w Pielsticker, Skelly Oil 2 ... dry

Wells completed ... 6
Production ... 60
Dry ... 3

SEMINOLE COUNTY

34-10- 6 Stewart, Carter Oil 4 ... dry
11- 9- 5 Davis, Barnsdall Oil 1 ... 475
Sparks, Magnolia Pet. 3 ... 850
23- 9- 6 Grisso, Carter Oil 3 ... 245
P. Fixico, Independent O. & G. Co. 1 ... 819
Goodin, I. T. I. Oil 4 ... 694
24- 9- 6 Carter, Barnsdall Oil 8 ... 4321
James, I. T. I. Oil 6 ... 400
J. Carter, Tidal Oil 3 ... 210
25- 9- 6 Wilkins, Mid-Kansas Oil 1 ... 250
26- 9- 6 Fixico, Gypsy Oil 3 ... 65
J. Wolfe, Gypsy Oil 5 ... 4520
Bowlegs, I. T. I. Oil 8 ... 780
Strothers, Pure Oil 9 ... 1241
Strothers, Pure Oil 13 ... 3395
18- 9- 8 Peters, Southwestern Pet. 5 ... 65
25- 9- 6 Gross, Prairie O. & G. 4 ... 250
27- 9- 6 Strothers, Prairie O. & G. 5 ... 550
34-10- 6 Wilkins, Prairie O. & G. 3 ... dry
33-10- 6 Youngblood, F. J. Searight 1 ... gas
Youngblood, Searight et al 2 ... dry
4-10- 8 Jackson, The Texas Company 5 ... dry
3- 9- 6 Polly, Sinclair Oil 1 ... 2325
10- 9- 5 Bruner, Independent O. & G. 4 ... 67
15- 9- 5 Anderson, McGraw & Boughman 1 ... dry
4- 9- 6 Davis, Carter Oil 2 ... 2160
13- 9- 6 F. Knapp, Carter Oil 3 ... 858
14- 9- 6 Rentie, Mid-Continent Pet. 3 ... 480
Rentie, Mid-Continent Pet. 10 ... 90
F. Killing, Carter Oil 4 ... dry
22- 9- 6 Harjo, Kingwood Oil & Roxana Pet. 1 ... 838
Harjo, Kingwood Oil & Roxana Pet. 2 ... 1228
Harjo, Kingwood Oil & Roxana Pet. 4 ... 545
Harbor, Roxana Pet. 1 ... 1169
23- 9- 6 Killingsworth "B," Amerada Pet. 2 ... 190
Grisso, Carter Oil 5 ... 5145
F. Carter, Carter Oil 4 ... 240
M. Killing, Carter Oil 5 ... 3077
Harjo, Tidal Oil 5 ... 85
Goodin, I. T. I. Oil 2 ... 200
Goodin, I. T. I. Oil 3 ... 200
24- 9- 6 James, I. T. I. Oil 1 ... 7
Carter, Barnsdall Oil 7 ... 2400
25- 9- 6 Tayoche, Tidal Oil 2 ... 895
26- 9- 6 Jones, Independent & Interocean Oil 4 ... 1000
Strothers, Pure Oil 12 ... 1665
Strothers, Pure Oil 14 ... 4048
Strothers, Pure Oil 16 ... 3833
27- 9- 6 Strothers, Phillips Pet. 1 ... 1087
35- 9- 6 Grisso, Turman Oil 1 ... 4236
Cudjo, Superior Oil 3 ... 2084
Giblet, T. B. Slick 1 ... 1023
Cudjo, Turman Oil 2 ... 1518
Cudjo, Atlantic O. P. Co. 2 ... 3500
Cudjo, Carter Oil 3 ... 3735
2- 8- 6 Payne, I. T. I. Oil 1 ... dry
10- 8- 7 Davis, Carter Oil 1 ... 270
22- 7- 7 Coppage, Transcontinental Oil 5 ... 75
31- 8- 8 Amos "B," Producers & Refiners Corp. 13 ... 80
33-10- 6 Kinkade, The Prairie O. & G. 7 ... 3160
34-10- 6 Washburn, The Prairie O. & G. 2 ... dry
15- 9- 5 Anderson, Amerada Pet. 1 ... dry
Anderson, McGraw & Baughman 2 ... dry
3- 9- 6 Frazier, Carter Oil 2 ... 2685
4- 9- 6 Davis, Carter Oil 3 ... 2715
14- 9- 6 G. F. Killing, Carter Oil 3 ... 800
Rentie, Mid-Continent Pet. 12 ... 45
24- 9- 6 Tayoche, Mid-Continent Pet. 6 ... 50
23- 9- 6 M. Killing, Carter Oil 2 ... 1315
26- 9- 6 Bowlegs, I. T. I. Oil Co. 7 ... 900
35- 9- 6 R. Cudjo, T. B. Slick 1 ... 3060
Franks, T. B. Slick 4 ... 2500
36- 9- 6 Frazee, Gypsy Oil 1 ... dry
14- 8- 6 Lacey, Empire G. & F. 1 ... 5657
15- 8- 6 Walker, Carter Oil 1 ... 7005

32- 8- 8 Long, Independent O. & G. & Atlantic 4 65
30- 7- 8 Street, Carter Oil 1 ..... dry
27- 9- 6 Strother, The Prairie O. & G. .23000

Wells completed 78
Production 101684
Dry 13
Gas 1
Gas production 1,500,000

TULSA COUNTY

22-19-10 Timothy, W. E. Holmes et at 6 50
11-19-13 Charles, E. H. Cornelius 1-A . dry
17-18-14 Thatcher, W. B. Pine 1..... gas
18-17-13 Crosly, W. A. McCullough 1-A. 10
7-19-10 Burnett, Superior Oil et al 7 10
15-19-11 Fife, Glidden Oil Corp. 1..... 280
6-19-10 Futrell, J. Hayden 2..... dry
13-19-11 Fife, E. R. Minshall et al 6... 250
A. Fife, Glidden Oil Corp. 2..... 350
A. Fife, Glidden Oil Corp. 3..... 50
21-19-11 Fife, Minshall et al 1 ..... dry
32-19-11 Unallotted, Holmes et al 1..... dry
4-18-10 Graham, Dixie & Holmes 1... dry
6-18-10 Bell, G. M. Oil Co. et al 1..... dry
25-18-13 Unallotted, T. Green 1..... 15
21-21-13 Collins, Tidal Oil 6..... 4
6-19-10 McKee, Superior Oil 7..... 80
11-17-13 Couch, W. Holmes et al 1-A ... dry
7-18-14 McIntosh, Edwards et al 1.... dry

Wells completed 19
Production 1099
Dry 8
Gas 1
Gas production 3,000,000

MISCELLANEOUS COUNTIES

Hughes County—

1- 9- 9 Bruner, Independent O. & G. & Atlantic O. P. 4..... dry
1- 8- 8- McAllister, The Prairie O. & G. 1 ..... dry
21- 9-10 Buck, Furman & Newman 1 . 169
34- 9- 9 Harjo, Mid-Kansas Oil 1..... 160
13- 8- 9 Long, Noble O. & G. 1..... dry
25- 9- 9 Pigeon, Winona Oil 1..... dry

Pottawatomie County—

15- 7- 4 Standridge, Darby Pet. 1..... 57
25-10- 4 Madgett, McCullough Oil 1..... dry
16- 9- 5 School land, Gypsy Oil 3.....9497
19- 7- 4 Talley, Pierce Oil et al 1..... 105

Caddo County—

16- 5- 9w Bigley, Hall & Brisco 2..... 100
2- 5- 9w Wade, Gorton Trust Co. 7..... 180

Logan County—

28-18-4w Moore, Franklin Oil Assn. 1.... 60

Lincoln County—

8-15- 6 Varner, Phillips Pet. 2..... 388
7-14- 4 Benedict, Magnolia Pet. 1..... 106
34-15- 6 Hemming, Amerada Pet. & Madden & Madden 1..... dry

Pittsburg County—

2- 7-18 Noftsger, Quinton Relief Oil 3.. dry
10- 7-18 Bascomb, Quinton Relief Oil 1 . gas

Garvin County—

15- 1- 3w Cowan, Magnolia Pet. 25..... gas
13- 1- 3w Wyatt, Magnolia Pet. 7..... 25

Washington County—

1-27-13 Dodson, Ed Hutchinson et al 1 dry
36-24-12 White, The Texas Co. 1..... 2
12-25-12 Daniels, Hester O. & G. 2..... 8
16-25-14 McKessick, L. W. Kroh 1.... 5

Rogers County—

21-24-17 Waller, Chas. Hawkins 1..... dry
6-24-18 Sharp, Tulsa Parties 1..... dry

Comanche County—

19- 3- 10w Jennings, Magnolia Pet. 1.... dry

Wells completed 27
Production 10862
Dry 11
Gas 2
Gas production 36,000,000

CARTER COUNTY

Rigs

18-18-3w Dixon, Westheimer 4.
19-18-3w J. Hardin, Magnolia Pet. Co. 8.
W. Hardin, Magnolia Pet. Co. 5.
33-1s-3w I. Bumpass, Magnolia Pet. 4.
2-2s-3w Calvery, Humble O. & G. Co. 5.
3-2s-3w Pruitt, Wirt Franklin & Prairie 11, 13.
10-2s-3w Adams, Magnolia Pet. Co. 11.
21-2s-3w Morris, Magnolia Pet. 1.

Wells Drilling

2-1s-3w Peck, Magnolia Pet. Co. 1.
14-1s-3w Pollock, Magnolia Pet. Co. 1-B.
17-1s-3w Peck, Magnolia Pet. Co. 1.
18-1s-3w Dixon, Humble O. & R. Co. 3.
Jordan, Humble O. & R. Co. 10, 11, 12.
E. Hardin, Magnolia Pet. Co. 4.
Dixon, Westheimer 2, 3.
19-1s-3w Jordan, Humble O. & R. Co. 9, 13.
J. Hardin, Magnolia Pet. 7.
W. Hardin, Magnolia Pet. Co. 4.
Dixon, Menick-Gault 1.
20-1s-3w Denny, Menick-Cameron 1.
23-1s-3w Lewis, Magnolia Pet. Co. 1.
28-1s-3w Miller, Magnolia Pet. Co. 2.
29-1s-3w Spears, Magnolia Pet. Co. 2.
32-1s-3w Morrison, Magnolia Pet. Co. 1.
33-1s-3w I. Bumpass, Magnolia Pet. Co. 3.
34-1s-3w Fish, Magnolia Pet. Co. 9.
19-1s-2w Morris, McGee 1.
2-2s-3w Calvery, Humble O. & R. Co. 4.
Calvery, Schermerhorn et al 2.
3-2s-3w Liles, Gypsy Oil Co. 6.
Adams, Magnolia Pet. Co. 10.
Carpenter, Magnolia Pet. Co. 3.
10-2s-3w Adams, Magnolia Pet. Co. 9.
Grimes, Magnolia Pet. Co. 1.
11-2s-3w Lyles, Atlantic O. P. Co. 2.
Carpenter, Wirt Franklin 1.
Lyles, Roxana Pet. Co. 1.
Hales, Simpson & Fell 2.
12-2s-3w Kennedy, Pure Oil Co. 2.
21-2s-3w Kimbrell, Carter Oil Co. 4.
22-2s-3w Morris, Magnolia Pet. Co. 2.
23-2s-3w J. Lohman, Magnolia Pet. Co. 13.
Williams, Skelly Oil Co. 2.
26-2s-3w Swartz, Magnolia Pet. Co. 5.
Fee, C. R. Smith 6.
27-2s-3w Love & Thurman, Wirt Franklin 7.
29-2s-3w Dougherty, Phillips Pet. Co. 3.
6-2s-2w Higgins, Coline Oil Co. 4, 6.
7-2s-2w Higgins, Coline Oil Co. 9.
Watkins, Iowa Oil Co. 1.
Pierce, Roxana Pet. Co. 1.
8-2s-2w Pierce, Carter Oil Co. 2.
16-2s-2w M. Cox, Magnolia Pet. 5.
G. Cox, Magnolia Pet. Co. 5.
Gladney, Atlantic Oil Prod. Co. 1.
18-2s-2w Pierce, Coline Oil Co. 10.
21-2s-2w Wilson, Magnolia Pet. Co. 6.
26-2s-2w Harmon, Magnolia Pet. Co. 1.
27-2s-2w Noble, Menick et al 5.
33-4s-1w Simpson, Magnolia Pet. Co. 1.
9-4s-2w Lowery, Simpson & Fell 3.
35-4s-2e Miller, Magnolia Pet. Co. 1.
2-5s-3w Frazier, Roxana Pet. Co. 1.
20-5s-1e Criner, Amerada Pet. Co. 11.

Shut Down

33-1s-3w Bumpass, Humble O. & R. Co. 1.
23-2s-3w Williams, Skelly Oil Co. 2.
Rigs, 9; wells drilling, 61; total, 70.

CREEK COUNTY

Rigs

19-19- 8 Miles, Steinberger & Smith 3.
9-18- 7 Long, Sinclair O. & G. Co. 2.
23-18- 8 Crispie, A. A. Bailey & Barnsdall Oil Co. 1.
16-17- 8 Strip, Burk Greis 2.
Morrison, Shaffer O. & R. 2, 4.
21-15- 8 Callahan, C. G. Tibbons O. & G. 1.
30-15- 8 Benjamin, Lima O. & G. Co. 5.
29-14- 8 Mitchell, Pure Oil Co. 2.
7-19- 9 Tahkaney, Dixie Oil Co. 1.
17-18- 9 King, H. U. Bartlett 5.
21-18- 9 Gray, Curtis Oil Co. 1.
1-18-11 McGuire, Gypsy Oil Co. 23.
10-18-11 Unallotted, Well & Christie 2.
5-18-12 Townsite, Savoy & Munn 1.
6-18-12 Townsite, Calvin & Swindler 1.
Townsite, Farquean et al 1.
Townsite, Henson & Gilliland 1.
Townsite, Valley Osage Oil Co. 1.
Townsite, Verser et al 1.
10-17- 9 Lindsey, Wilcox O. & G. Co. 5.
11-17- 9 Yarhola, Roxana Pet. Co. 1.
7-17-10 Tannes, Dixie Drlg. Co. 1.
12-17-10 Harris, Carter Oil Co. 2.
13-17-10 Tiger, Cumberland Oil 3, 4.
30-17-10 Sneed, Independent O. & G. Co. 2.
35-17-10 Bucktrot, Hiram O. & G. Co. 5.
13-17-11 McIntosh, Wood Oil Co. 1.
21-16- 9 Jacobs, L. Emery & Sons 8.
Hendrickson, Jackson & Wise 3.
5-16-10 Provence, Elson & Detrick 1-A.
2-16-11 Newton, Future Dev. Co. 1.
Anthis, Twin State Oil Co. 1.
31-15- 9 R. Lucas, C. G. Tibbons 6.
29-14- 9 Abraham, The Texas Co. 1.
20-14-10 Scott, Donnelly et al 3.
32-14-10 Jones, T. B. Slick 6.
10-17- 9 Flint, The Prairie O. & G. Co. 1.

Wells Drilling

13-19- 8 Weaver, The Texas Co. 6.
14-19- 8 Miller, Devonian Oil Co. 7.
27-19- 8 Williams, Elson, Cooper & Carter Oil 1.
5-18- 7 Riverbed, Riverside Oil Co. 4.
Rector, The Prairie O. & G. Co. 40.
6-18- 7 Vance, Magnolia Pet. Co. 2.
Riverbed, Sinclair O. & G. Co. 9.
8-18- 7 Yarhola, Riverside Oil Co. 2.
11-18- 7 Millie, The Prairie O. & G. Co. 2.
16-18- 7 Coker, Magnolia Pet. Co. 13.
17-18- 7 Bruner, The Prairie O. & G. Co. 1.
26-18-7 Jones, Shaffer O. & R. Co. 2.
32-18- 7 Fulkerson, Magnolia Pet. Co. 2.
35-15- 7 Sheppard, The Prairie O. & G. Co. 1.
30-18- 8 Holman, J. O. Walters et al 1.
17-17- 7 Tiger, Shaffer O. & R. Co. 15.
24-17- 7 Ingalls, Transcontinental Oil Co. 2.
4-17- 8 Lesley, McCullough et al 1.
17-17- 8 Bruner, Shaffer O. & R. Co. 3.
10-16- 8 Bruner, F. R. Billingslea et al 1.
36-15- 7 C. L. Freeland 1.
Tiger, R. J. Jennings 2.
36-15- 7 Bigpond, Devonian Oil & Independ-
10-15- 8 Lewis, F. R. Billingslea et al 1.
27-15- 8 Grayson, Independent & Tibbons 1.
ent O. & G. 2.
29-15- 8 Factor, C. G. Tibbons 1.
30-15- 8 Lindsley, Empire G. & F. Co. 3.
Helahcoweney, Phillips Pet. Co. 1.
17-14-8 Cooper, Shaffer O. & R. Co. 1.
24-14- 8 Bear, C. G. Tibbons 1.
29-14- 8 Mitchell, Pure Oil Co. 3.
:0-14- 8 Fixico, Gypsy Oil Co. 1.
30-14- 8 McGelbra, Olean Pet. Co. 3, 4.
2-19- 9 Unallotted, Sherry et al 1.
18-19- 9 Sewell, Roxana Pet. Co. 3.
34-19- 9 Derrisaw, Smith & Mann 1.
35-19- 9 Curtis, Kessler Drlg. Co. 1.
4-18-10 Brown, Bu-Vi-Bar & Gypsy Oil 1.
7-18-10 King, C. M. Oil Co. 1.
9-18-10 Jackson, Bu-Vi-Bar Pet. 1.
1-18-11 Land, Riverland Oil Co. 9.
1-18-11 Land, The Texas Co. 14.
10-18-11 Traser, Plymouth Pet. Co. 1.
13-18-11 Barnett, Regal Oil Co. 16.
22-18-11 Bruner, Sheridan Oil Co. 1-A.
32-18-11 Strip, Drew O. & G. Co. 1.
5-18-12 Townsite, Savoy et al 1.
Townsite, C. B. Short 1.
6-18-12 Townsite, Commercial Drlg. Co. 1.
Townsite, W. S. Dickey 1.
Townsite, Lot et al 1.
Townsite, Mayflower et al 1.
Townsite, O'Reilly & Lillystrand 1.
Townsite, J. H. Rebold 1.
Townsite, Savoy Oil Co. et al 1.
Townsite, J. S. Stout 1.
Townsite, L. C. Wheeler 17.
3-17- 9 Simmons, The Texas Company 7.
13-17- 9 Carter, Abbott & Dillard 1.
18-17- 9 Harjo, Bu-Vi-Bar Pet. Co. 1.
1-17-10 Unallotted, Henry Oil Co. et al 1.
Wilcox, Margy Oil Co. 1.
2-17-10 Self, Iron Mtn. Oil Co. 1-A.
Johnson, T. C. M. Oil Co. 1.
5-17-10 Francis, Dixie Oil Co. 4.
8-17-10 Pemberton, Nowata & Independent O. & G. 3.
11-17-10 Wrightsman, Whitten & Wilson 3.
12-17-10 Harris, Carter Oil Co. 1.
Turner, W. H. Elson et al 2.
Harris, W. H. Elson et al 1.
Harris, E. P. Harwell 1.
Turner, Thompson & Black 1.
13-17-10 Strip, J. R. Cole Jr. 2.
24-17-10 Dawson, J. H. Wright 10.
T. Tahkaney, J. H. Wright 17.
Bucktrot, Pioneer Pet. Co. 13.
25-17-10 Berryhill, O. M. Ireland 1.
9-17-11 Barnett, O. M. Ireland 2.
16-17-11 Broadnox, Thompson & Black 1.
Wilson, Thompson & Black 1.
17-17-11 Black, Misener et al 1-A.
19-17-11 Lewis, Pioneer Pet. Co. 1.
22-17-11 Jackson, Carpenter et al 3.
16-16- 9 Unallotted, C. Stoker et al 3.
21-16- 9 Hendrickson, Love & Myers 2.
36-16- 9 Allen, Williams & Bell 1.
26-16-10 Eprill, Curtis Oil Co. & O. Howard 1.
2-16-11 Jones, Future Dev. Co. 1.
7-16-12 Bowman, Sherry et al 1.
13-16-12 Unallotted, Winemiller et al 1.
20-15- 9 Montgomery, C. G. Tibbons 1.
Fobes, C. G. Tibbons 2.
Unallotted, C. G. Tibbons 35, 36.
30-15- 9 Unallotted, C. G. Tibbons 37.
31-15- 9 Creek, The Texas Company 1.
9-15-10 Hohomer, Carter Oil Co. 4.
7-14- 9 Sneed, The Texas Company 1.
19-14- 9 Allcorn, Atlantic O. P. & Phillips Pet. 1.
1-14-10 Withers, Gray Oil Co. 1.
4-14-10 Jones, Mid-Cont. Pet. Co. et al 1.
9-14-10 Unallotted, C. G. Tibbons 1.
10-14-10 Kimball & Reading 1.
16-14-10 Bear, Atlantic O. P. et al 5, 4.
18-14-10 Wolfe, Independent O. & G. Co. 1.
23-14-10 Scott, Atlantic O. P. Co. 1.
32-14-10 Walker, Empire G. & F. Co. 3.
Fee, Henry & Murphy 2.
Walker, Mid-Continent Pet. Co. 8.
Harjo, T. B. Slick & Fuhrman 2.
Jones, T. B. Slick 5.
32-14-10 S. Doyle, T. B. Slick & Prairie 2.

Shut Down

36-17- 8 Farres, Murray Oil Co. 1.
27-18-10 Allen, Vaughn & Wheeler 6.
14-18-11 Tiger, O. N. White 1-A.
32-18-11 Drews, Gross et al 1.
8-17-10 Pemberton, T. S. Turman 2.
9-17-10 Charcotentana, Transcontinental Oil Co. 1.
13-17-10 Fulson, Pontiac Oil Co. 2.
30-15- 9 Fields, C. G. Tibbons 4.
20-14-10 Elrod, Quinland & Henry 3.
35-14-10 Ricks, Bassett et al 1.
Rigs, 39; wells drilling 124; total, 163.

COMANCHE COUNTY

Wells Drilling

32- 4-10 Dockman, Abernathy et al 2.
13- 2-10w Cox, Westheimer & Daube 1.
26- 2-10w School land, Ashcraft et al 1.
14- 1-12w Wilson, Green et al 1.
23- 1-12w Bentley, Bentley et al 1.

Shut Down

10- 2-10w Spitler, Danciger Oil Co. 1.
24- 2-10w Cox, William Green 3.
Allen, Shaw & Rathke 1.
30-1s-13w Cox, Mid-Kansas Oil Co. 1.
Wells drilling, 9; total, 9.

GARFIELD COUNTY

Rigs

24-24-3w Disney, Failing & Lawson 1.
19-23-3w Wilcox, Skelly Oil 1.

Wells Drilling

9-24-6w White, Pulse & Beamer 1.
14-24-3w Garsarsch, Sagar Oil Co. 1.
29-23-4w Brunken, Roxana Pet. Co. 1.
19-23-3w Whipple, Marland Oil Co. 1.
13-22-4w Walker (N), Sinclair Oil 68, 72, 73.
Denker, Sinclair Oil 29.
14-22-4w Dively, Sinclair Oil 5.
23-22-4w Smithe, Reynolds 1.
25-22-4w Hoy, Sinclair Oil 22.
18-22-3w Schroeder, Roxana Pet. Co. 11, 29.
Hartley, Sinclair Oil Co. 37, 56.
19-22-3w Kisner (W), Sinclair Oil 15, 21, 39.
W. Windler, Sinclair Oil Co. 11, 16.
2-21-7w Montgomery, Frank Fuentz 1.
12-21-4w Schriven, Beopple et al 1.
2-20-5w Fee, Sinclair Oil Co. 1.
9-20-4w Looman, Marland Oil Co. 1.

Shut Down

3-22-5w Swinery, Ashby & Barr 1.
31-21-5w Vanerwork, A. E. Summers 1.
5-21-3w Cain, Penders Pet. Co. 2.
9-21-3w Bowers, Penders Pet. Co. 1.
7-20-6w Semrad, O. O. Owens 1.
12-20-4w Miller, Marland Oil Co. 1.
Rigs, 2; wells drilling, 30; total, 32.

GRADY COUNTY

Rigs

23-5-8w Edmundson, Skelly Oil Co. 5.
7-5-5w Drake, Nicholos & Page 1.
1-3-6w Pipps, Unknown 1.
5-3-5w Gardenhire, Amerada Pet. Co. 1.
34-3-5w Mitchell, Magnolia Pet. 3.
35-3-5w Scharmack, Carter Oil 3.

Wells Drilling

14-5-8w McKee, Stogner et al 1.
22-5-8w Charles, Sinclair O. & G. Co. 5.
23-5-8w Farwell, Meridian Gas Co. 3.
24-5-8w F. Smith, Little Nick Oil Co. 1.
34-5-8w Scott, Grogan et al 1.
10-4-8w Ramsey, Meridian Gas Co. 1.
11-4-8w Williams, J. B. Nicholos 1-A.
14-4-8w Pendley, Magnolia Pet. Co. 3.
35-4-8w Ridgeway, J. B. Nicholos 1.
26-4-6w Pursley, Henry & Sinclair Oil 1.
31-4-5w Anderson, Magnolia Pet. Co. 1.
6-3-5w Sledge, Frutes et al 1.
7-3-5w Phipps, Marland Oil Co. 1.
8-3-5w T. Horton, Carter Oil Co. 1.
B. A. Horton, Carter Oil Co. 3, 4.
Roy Horton, Carter Oil Co. 1.
Horseman, Carter Oil Co. 1.
Nash, Carter Oil Co. 1.
14-3-5w Hitchcock, Stanley O. & G. Co. 1.
16-3-5w Dolen, Carter Oil Co. 2.
Hicks, Amerada Pet. & W. H. Gant 2, 3.
Gardenhire, Carter Oil Co. 1.
Walford, Carter Oil Co. 5, 6.
Stacey, Garvin Drlg. Co. 2.
Kayser, Gyspy Oil Co. 3, 4.
Burke, Marland Oil Co. 3.
Notholf, Twin State Oil Co. 1.
17-3-5w B. A. Horton, Carter Oil Co. 2.
Woods, Carter Oil Co. 2.
Woods, Magnolia Pet. 1.
20-3-5w Hogue, Gypsy Oil Co. 1.
21-3-5w Ball, Carter Oil Co. 1.
Costello, Carter Oil Co. 1.
Hogue, Carter Oil Co. 1.
E. Kerans, Carter Oil Co. 1.
C. Kerans, Carter Oil Co. 2, 3.
Spaulding, Carter Oil Co. 1.
White, Carter Oil Co. 1.
C. Kerans, Clark & Cowden 2.
Russell, Magnolia Pet. Co. 1.
22-3-5w Miller, Empire G. & F. Co. 1.
Miller, Carter Oil Co. 2, 3, 4.
Miller, Magnolia Pet. Co. 1.
25-3-5w Graham, Magnolia Pet. Co. 1.
27-3-5w Pounds, Amerada Pet. Co. 1.
Adair, Carter Oil Co. 2, 3.
W. E. Polson, Carter Oil Co. 5, 6.
Adair, Critchlow et al 3.
Polson, Gant et al 2.
Cochran, Magnolia Pet. Co. 3.
28-3-5w Slusher, Carter Oil Co. 1.
Harrison, Magnolia Pet. Co. 4, 5.
Miller, Magnolia Pet. Co. 2.
C. Kerans, Magnolia Pet. Co. 1.
Wham, Carter Oil Co. 4, 5, 6.
E. Nation, Carter Oil Co. 2, 3.
34-3-5w B. Mitchell, Magnolia Pet. Co. 2.
Wham, Magnolia Pet. Co. 1.
Mitchell, R. R. McBride 1.
35-3-5w Cochran, Carter Oil Co. 1.
Abernathy, Carter Oil Co. 4.
Hildebrant, Carter Oil Co. 2.
22-5-8w Pooler, The Prairie O. & G. Co. 1.
21-3-5w Russell, The Prairie O. & G. Co. 2.

Shut Down

13-7-5w Kemp, Bedman et al 1.
12-5-9w Rigney, J. P. Shelton et al 1.
26-5-8w Farwell, Little Nick Oil Co. 3.
27-5-8w Glover, Okla. Crude Oil Co. 3.
35-5-8w Dryden, J. B. Nichols Oil Co. 1.
6-3-5w Sledge, Brisco & Hall 1.
17-3-5w Woods, Marland & Joe Ray 2.
21-3-5w M. Kerans, Carter Oil Co. 2.
28-3-5w Wilde, Joe Anderson 1-A.
34-3-5w Mitchell, R. R. McBride 1.
Rigs, 6; wells drilling, 87; total, 93.

HUGHES COUNTY

Rigs

14- 7- 8 Jacobs, W. R. Ramsey 3.
26- 9- 9 Kennedy, The Prairie O. & G. Co. 2.

Wells Drilling

1- 9- 9 Cain, Minnehoma Oil Co. 6.
4- 9- 9 Alexander, Berry Pet. 6.
4- 9- 9 Ogle, Transcontinental Oil Co. 9.
19- 9- 9 Charles, Atkins 1.
26- 9- 9 Harjo, Transcontinental Oil & Independent O. & G. 12.
35- 9- 9 Powell "B," Roxana Pet. 1.
6- 9-10 Hully, Amerada Pet. Co. 2.
11- 8- 9 Long, Carter Oil Co. 1.
Long, Mid-Continent Pet. Co. 1.
14- 8- 9 Long, Independent O. & G. Co. 2.
15- 8- 9 Washington, Phillips Pet. Co. 1.
17- 8-10 Cornelius, Dixie Oil Co. 1.
19- 8-10 Alexander, Carter Oil Co. 5.
21- 8-10 Hamphill, Burk-Greis Oil Co. 1.
32- 8-11 Turner, Coogan et al 1.
28- 7- 8 Harjo, Magnolia Pet. Co. 1.
26- 9- 9 Kennedy, The Prairie O. & G. Co. 1.
4- 7- 8 Long, Producers & Refiners 4.
14- 7- 8 Shawnego, Producers & Refiners 1.

Shut Down

26- 9- 9 Harjo, Transcontinental Oil & Independent O. & G. 11.
30- 9- 9 Anderson, T. B. Slick 1.
35- 9- 9 Powell, Roxana Pet. Co. 2.
3- 8- 9 Harjo, Champlin & Bass 1.
18- 8-10 Diamond "B," Dixie Oil Co. 1.
Diamond "A," Dixie Oil Co. 2
Diamond "C," Dixie Oil Co. 3.
Rigs, 2; wells drilling, 26; total, 28.

KAY COUNTY

Rigs

21-29-1w Duncan, The Comar Oil Co. 1-W.
31-27-1w Love, McCullough et at 1.
30-25-1w Sutton, Carter Oil Co. 1.
34-25-2e Sandsyellow, Boucher et al 1.

Wells Drilling

16-29-1w Brown, Comar Oil Co. 4-W.
17-29-1w Moore, Twin State Oil Co. 2.
20-29-1w Day, Comar Oil Co. 4-W.
Day, The Texas Company 5, 6.
21-29-1w Bisell, Comar Oil Co. 1w, 12-W.
Duncan, Comar Oil Co. 15.
McCormick, Comar Oil 1-W, 5,W.
Priboth, Comar Oil 1-W, 8-W, 10-W.
17-29-1e Nixon, Carter Oil Co. & Ona Oil Co. 2, 3.
Shimp, Carter Oil and Ona Oil 4.
Dickerson, Marland Oil Co. 6.
White, Marland Oil Co. 2.
30-29-1e Hennessey, National Union Oil 3.
4-28-1w Dowd, Comar Oil Co. 1.
5-28-1w McCullough, Comar Oil Co. 1½, 6.
29-28-1w Gingerick, A. D. Morton, Dickey et al 1.
6-28-1e Wolfe, McComas et al 1.
11-28-1e Lowery, Okla. Northern O. & G. 1.
28-28-2e Huddleston, John Stark et al 1.
3-27-1w Moore, Arkansas Fuel Oil Co. 3.
4-27-1w Moore, Schouwaid et al 1, 2.
5-27-1w Savage, Vick Oil Co. 2.
17-27-1w Jameson, Carter Oil Co. 1.
19-27-1w Hall, Sinclair Oil Co. 1.
29-27-1e Powers, Hag Oil Co. 1.
3-27-2e Balzer, Mississippi Valley Oil Co. 2.
31-27-2e Ferguson, Anderson & Peterson 1.
1-26-2w Fitzgerald, Marland Oil Co. 1-B, 2-B, 3-A, 4-A.
Hockstetter, Marland Oil Co. 3-B.
Higgins, Marland Oil Co. 1.
12-26-2w Diller, Marland Oil Co. 1.
North, Marland Oil Co. 10, 11.
26-26-2w Williams, Palmer et al 1.
6-26-1w Glasgow, Barnsdall Oil Co.
Glasgow, National Union Oil & Marland 2.
North (lease No. 2), Marland Oil Co. 2, 3, 4.
7-26-1w Kaney, Blackwell & Marland Oil 3.
Kaney, Marland Oil Co. 1.
21-26-1e Keathley, A. D. Morton et al 1.
9-25-2w Chambers, Marland Oil Co. 1.
Miller, Marland Oil Co. 1.
4-25-2e Foureyes, Marland Oil Co. 1-A.
1-26-2w Smith "A," The Prairie O. & G. Co. 10.
Smith "B," The Prairie O. & G. Co. 8, 9, 10, 11, 2.
19-27-1w Hargraves, The Prairie O. & G. 1.

Shut Down

21-29-1w Priboth, Comar Oil Co. 2.
5-28-1w Townsite, Braman Oil Co. 2.
McCullough, Comar Oil Co. 5.
3-27-1w Moore, Arkansas Fuel Oil Co. 2.
12-26-2w North, Marland Oil Co. 4.
6-26-1w Currie, Mariand Oil & Phillips Pet. Co. 1.
32-26-2e McNeal, Ponca Lee Oil Co. 1.
15-25-1w McDaniels, Tonkawa Dev. Co. 1.
28-25-1w Becker, Skelly Oil Co. 3.
Siler, The Texas Company 4.
Rigs, 4; wells drilling, 73; total, 77.

LINCOLN COUNTY

Rigs

21-17- 4 Hays, W. J. Suerry & C. J. Wrightsman 1.
10-13- 6 Bleasoe, Wilcox O. & G. Co. 1.

Wells Drilling

34-17-2e Lukenbill, Wentz Oil Corp. 1.
20-14-3e Gunn, Willis O. & G. Co. 1.
31-17- 4 Scott, Roxana Pet. Co. 1.
33-17- 4 Ward, Empire G. & F. Co. 1.
31-17- 5 Bett, T. P. C. & O. Co. 1.
30-14- 5 West, Carter Oil Co. 1.
31-17- 5 Cook, Shaffer O. & R. Co. 1.
6-16- 5 Lindsey, I. T. I. Oil Co. 1.
11-16- 5 Hemmer, Morgan & Flynn 1.
14-15- 5 Clark, Magnolia Pet. Co. 1.
16-15- 5 Camden, Wilcox O. & G. Co. 1.
27-15- 6 Foster, J. A. Hull Oil Co. 1.
8-14- 4 Stanuus, Magnolia Pet. Co. 1.
6-14- 6 Teter, Mid-Continent Pet. Co. 1.
35-14- 6 Newkirk, Wilcox O. & G. Co. 1.
16-13- 4 School land, Bu-Vi-Bar Pet. Co. 1.
16-15- 6 School land, Mid-Continent Pet. 1.
Rigs, 2; wells drilling, 17; total, 19.

LOGAN COUNTY

Rigs

27-18-4w Jewell, Texas Pacific C. & O. 1.
33-18-4w Speaks, Texas Pacific C. & O. 1.

Wells Drilling

30-19-4w McCullough, Roxana Pet. Co. 1.
33-19-4w ———, Bryan & Emery 1.
32-19-3w Rogers, Carter Oil Co. 1
9-18-4w Lovell, Brown & Blev
16-18-4w Gragg, Healdton O. &

33-18-3w Quier, Haley & Pioneer Pet. 1.
5-17-1w Baker, Zingerle & Bailey 1.
28-17-1e Berry, T. B. Slick 1.

Shut Down

28-16-1w Lair, Blackford O. & G. Co. 1.
Rigs, 2; wells drilling, 9; total, 11.

MUSKOGEE AND WAGONER COUNTIES

Rigs

13-17-16 Atkins, Knox & Shouse 1.
18-17-17 Bruner, W. C. Newman Corp. 3.
7-16-15 Reynolds, C. W. Gillett 2.
32-16-18 Hawkins, A. A. Williams 2.
32-15-15 Austin, Link Oil Co. et al 1.
34-15-16 Robbins, K. Wassof 1.
16-15-17 Roberts, Sunray Oil Co. 1.
17-15-17 Warrior, W. R. Sommerville 3.
20-15-17 Ponds, J. M. Foltz 1.
9-15-18 Carolina, D. C. Lampton 1.
9-14-18 Holden, Jolly Ogg Oil Co. 4.

Wells Drilling

2-18-15 Davis, Cartwright & Kyle 3.
11-18-15 Lucky, Cartwright & Kyle 3.
Sier, C. Cornett 1.
4-18-16 Tiger, F. E. Webb et al 3.
25-17-16 McIntosh, Sevreda Oil Co. 5.
36-17-16 Bruner, M. E. Johnson 1.
14-16-16 Lunnon, M. E. Johnson 2.
29-16-16 Roberts, C. Brown et al 1.
29-16-16 Solomon, M. S. Mussellem 3.
29-15-15 Morris, E. Price 5.
16-15-17 Roberts, Denton & Marshall 1.
L. Roberts, E. L. Newport et al 1.
17-15-17 Warner, J. L. Selby 1.
Dinwiddie, W. R. Sommerville 2.
27-15-17 Sharper, J. M. Foltz 1.
10-15-18 Durant, C. M. Bradley 1.
24-14-17 McIntosh, W. J. Metzer 3.
5-14-19 Kelly, C. M. Bradley 1.

Shut Down

8-18-18 Brown, F. E. Webb & Allison 1.
7-15-16 Smith, H. B. Middleton 5.
33-15-16 Drew, H. W. Kiskaddon 1.
8-15-17 Rector, C. M. Whaley et al 1.
14-15-17 Bruner, E. H. Neal et al 1.
12-15-18 Jobe, C. F. Finefield 1.
18-14-17 James, Peterson et al 6.
34-14-17 Smith, J. L. Slusher 1.
2-14-19 Thompson, C. M. Bradley 1.
Wade, C. M. Bradley 1.
18-13-19 Smith, Howard & Murphy 1.
Rigs, 11; wells drilling, 29; total, 40.

OKFUSKEE COUNTY

Rigs

2-12-11 Sullivan, J. J. Deaner 1.
33-12-11 McCoy, Josey Oil Co. 13, 16, 20, 21.
35-11- 9 Winds, Gilcrease Oil Co. 2.
14-11-10 Brooks, Terrian et al 1.
14-11-11 Taylor, Independent O. & G. Co. 1.
23-11-11 Unallotted, Carter Oil Co. 2, 3.
1-10- 8 Deer, Burk-Greis 1.
2-10- 9 Tecumseh, Mid-Continent Pet. et al 1.
31-10-12 Fields, L. W. Umburn 2.

Wells Drilling

7-13- 7 Wilson, Roxana Pet. Co. 1.
13-12- 6 Strip, Mid-Continent Pet. Co. 1.
7-13-10 Micco, L. E. Cooper & R. D. Donneily 1.
16-13-10 Manwarring, Darby Pet. Co. & Atlantic 1.
25-13-10 Harjo, Reams et al 1.
29-12-10 Hall, C. L. McMahon et al 1.
22-12-11 Holmes, Hartman et al 1.
28-12-11 Stubblefield, Josey Oil Co. 1.
32-12-11 Hulsey, Josey Oil Co. 5.
33-12-11 McCoy, Josey Oil Co. 10, 12, 15, 18, 19.
Fields, Josey Oil Co. 3.
14-11-10 Scott, Amerada Pet. Co. 1.
Fixico, Pure Oil Co. 1.
14-11-11 Ingram, Champlin O. & R. Co. 2.
15-11-11 Washington, Champlin O. & R. Co. 3.
Jacobs, Champlin O. & R. Co. 6.
19-11-11 Barnett, Riverland Oil Co. 1.
23-11-11 Likowsky, J. J. Deaner 2.
Grayson, A. D. Morton 1.
Jefferson, Champlin O. & R. Co. 2.
30-11-11 Holmes, Riverland Oil Co. 1.
35-11-11 Jackson, Atlantic O. P. Co. et al 4.
4-10- 9 Tiger, Gibson & Zahniser 1.
17-10- 9 Carolina, McCullough 1.
31-10-10 Cain, Amerada Pet. Co. 1.

Shut Down

8-12-10 Yarhola, Blakely et al 1.
33-12-11 Fields, Josey Oil Co. 2.
4-11-10 Stidham, Moose & Daniels 1.
11-10-11 Hill, L. Umburn 1.
Rigs, 13; wells drilling, 33; total, 46.

OKMULGEE COUNTY

Rigs

24-16-13 Lewis, H. A. Baker et al 1.
19-16-14 Grayson, Savoy Oil Co. 3.
30-16-14 Phillips, X. K. Stout 2.
13-15-11 Cobb, L. C. Wheeler et al 1-A.
27-15-12 Thornburg, Jorden & Thompson 1.
33-15-12 Wills, Sheridan Oil Co. 1.
4-14-12 Burton, Phillips Pet. Co. 1.
15-13-12 Skelton, Shelton Oil Co. 2.
7-11-12 Strip, French & Garrett 1.
Holmes, Moffett et al 5.
32-11-12 Ashbury, Colorado O. & G. Co. 2.
4-11-12 Hawkins, Weir 4.
10-15-14 Carter, J. W. Roberts et al 2.
9-14-15 Sells, J. L. Powell 5.
19-14-15 Rentie, M. S. Mussellem 2.
34-13-14 Fat, Barbara Oil Co. 9.

Wells Drilling

20-16-11 Pence, G. Simmons et al 2.
22-16-11 Escoe, Sinclair Oil 1.
34-16-11 Lowe, Iron Mtn. Oil Co. 2.
9-16-12 Penoka, Tom Turner et al 1.
5-15-12 Hickey, Holmes et al 2-A.
23-15-12 Peloche, Gray Oil Co. et al 4.
24-15-12 Blair, Ted Savoie 3.
29-15-12 Kelly, Strozier & Shaffer O. & R. Co. 1.
1-14-11 Brown, Penrod & Thompson 2.
28-14-11 Coleman, Nowata O. & R. Co. 1-A.
3-13-11 Anderson, R. C. Vincent et al 2.
27-13-11 Jones, H. Diamond 3.
31-12-12 Jordan, Hampton & Wylee 1-A.
3-15-14 Rentie, Hennessey et al 2.
Anderson, The Texas Company 1.
4-15-14 Hawkins, W. B. Pine and Prairie O. & G. Co. 2.
9-14-14 Phillips, X-Ray Oil Co. 1.
Reed, X-Ray Oil Co. 1-A.
12-14-14 Drew, Phillips, Boyle et al 1-A.
16-14-14 Love, W. R. Raney 4.
26-14-14 Flint, W. A. McCullough 5.
18-14-15 Rentie, Gallagher 3.
15-13-14 Reynolds, G. E. Semons & Roxana Pet. 10.
Doyle, Sims Oil Co. 20.
13-12-13 Gray, W. B. Pine 1.
20-12-13 Johnson, G. F. Hahn 1.
13-11-13 Davis, Nicholson Corp. 1.

Shut Down

20-16-12 Fee, Crider 1.
21-16-14 Rowe, Atlas Oil 3.
33-15-12 Jackson, L. C. Wheeler et al 2.
25-14-11 Huckaby, Tiger Mtn. Oil Co. 12.
17-14-15 Thompson, Link Oil Co. 2.
18-14-15 Rentie, A. F. Boone 4.
11-13-13 Gaither, Carey Jennings 1.
13-11-13 Fisher, B. Morgan 1.
Rigs, 16; wells drilling, 35; total, 51.

OSAGE COUNTY

Rigs

21-29- 9 Wah-Sha-She Oil Co. 1.
16-28- 8 J. J. Fitzstevens 1.
17-27- 6 Phillips Pet. Co. 3.
28-27- 6 Gypsy Oil Co. 4, 5.
33-27- 6 Carter Oil Co. 4, 9.
5-27-11 Osage Gas Prod. Co. 376.
21-25- 6 Sinclair O. & G. Co. 3.
29-25- 8 The Texas Company 5.
30-25- 8 The Texas Company 13.
7-24- 7 Phillips Pet. Co. 1.
18-24- 8 C. B. Peters 1.
17-23-10 Gypsy Oil Co. 1.
20-23-10 Superior Oil Co. 4.
26-22-11 Ray Branstetter 1-A.
15-21- 9 Phillips Pet. Co. 1.
6-21-10 Peters Pet. Co. 1.
11-24- 6 Prairie O. & G. Co. 1.
19-23- 7 Prairie O. & G. Co. 1.

Wells Drilling

17-27- 6 Prairie O. & G. Co. 2.
15-28-10 Winona Oil Co. 1.
1-27- 5 Phillips Pet. Co. 6.
7-27- 6 Phillips Pet. Co. 10.
Phillips Pet. Co. 5, 6, 8.
17-27- 6 Peters Pet. Co. 7.
20-27- 6 Peters Pet. Co. 2.
34-27- 6 Kewanee O. & G. Co. 6, 7, 8.
Kewanee O. & G. Co. 5.
Kewanee O. & G. Co. 4, 5, 6.
5-27-11 Blackwell O. & G. Co. 1-A.
12-26- 4 Skelly Oil Co. 1.
20-26- 6 Phillips Pet. Co. 7.
28-26- 6 Skelly Oil Co. 11, 12.
The Texas Company 6.
29-26- 7 Wrightsman 1.
19-25- 8 A. G. Oliphant 6.
30-25- 8 The Texas Company 12, 14.
3-25- 9 Gypsy Oil Co. 1.
27-25- 9 Marland Oil Co. 1.
13-24- 8 I. T. I. Oil Co. 357.
17-24- 9 Dunnagan et al 4.
Pantex Oil Co. 1.
20-24- 9 Mid-Continent Pet. Co. 5.
Tidal Oil Co. 5.
28-24-10 Winona Oil Co. 22.
9-24-12 59-Osage Oil Co. 37.
1-23- 8 Tidal Osage Oil Co. 6.
29-23- 8 I. T. I. Oil Co. 359.
17-23-10 Delmar Oil Co. 2, 3.
New England O. P. L. Co. 2.
20-23-10 Delmar Oil Co. 1-A.
Superior Oil Co. 3.
1-22- 9 Sterling O. & G. Co. 10.
23-22- 9 Ray Branstetter 2.
34-22-10 Tidal Osage Oil Co. 22.
33-22-11 Devonian Oil Co. 1.
2-21- 8 Barnsdall Oil Corp. 5.
6-21-10 Peters Pet. Corp. 1.
14-21-10 Lillystrand et al 4.
7-21-11 Skelly Oil Co. 5.
Tidal Oil Co. 7.
23-20-10 Sand Springs Home 1.
36-20-10 Sand Springs Home 102.
22-20-11 Sand Springs Home 1.
5-20-12 F. A. Gillespie 11.
28-20-12 Continental Oil Co. 12.
31-25- 8 Prairie O. & G. Co. 3, 5.
30-24-12 Prairie 42.

Shut Down

3-25- 5 Barnsdall Oil Co. 1.
27-25- 9 Marland Oil Co. 2.
5-22-12 T. K. Sharp 1.
Rigs, 20; wells drilling, 62; total, 82.

PAYNE COUNTY

Wells Drilling

30-19-2e Montgomery, Gardner Pet. Co. 1.
13-19-4e Stover, Roxana Pet. Co. 1.
8-19-5e Walker, Magnolia Pet. Co. 2, 3.
14-19-5e Norman, Twin State Oil Co. 1.
5-19-6e Ogradsby, Magnolia Pet. Co. 1-A.
6-19-6e Townsite, Noble O. & G. Co. 11.
23-18-1e Hilber, Twin State Oil Co. 1.
7-18-4e Ramsey, Pure Oil Co. 1.
26-18-4e Brodt, New England O. & P. L. Co. 5.
4-18-5e Little Chief, Shaffer O. & R. Co. 1.
7-18-5e Blue, Marland Oil Co. 4.
9-18-5e Harris, Shaffer O. & R. Co. 1.
36-18-5e School land, Transcontinental Oil Co. 1.
5-17-4e Payne, Mulberry Oil Co. 1.
Sharrum, Shaffer O. & R. Co. 6.

Shut Down

21-19-1w Lewis, Ponca O. & G. Co. 1.
32-18-3e Widows, Garber, Pulse & Gloyd 1.
Rigs, 0; wells drilling, 18; total, 18.

PAWNEE COUNTY

Rigs

9-22- 6 Moore, Garber & Pulse 1.
25-21- 6 Henry, Bryan & Emery 1.
32-20- 5 Makin, Continental Oil Co. 2.
33-20- 5 Pollock, Gypsy Oil Co. 5.
10-20- 6 Cave, George Baker 1.
9-20- 7 Rule, Superior Oil Corp. 2.
7-20- 8 Margin, Shelts et al 4.
13-20- 9 Jamison, Industrial O. & G. Co. 1.
17-20-10 LeMaster, Sheridan Oil Co. 1.

Wells Drilling

9-22- 3 Arkeketa, Watchorn O. & G. Co. 1.
10-22- 3 Tucker, Magnolia Pet. Co. 1.
10-22- 4 Wineare, Magnolia Pet. Co. 1.
35-22- 6 Dobson, Devonian Oil Co. 4.
16-21- 6 School land, 101 Ranch Oil Co. 1.
21-21- 6 Bow, Gypsy Oil Co. 1.
16-21- 7 School land, Barnsdall Oil Co. 1.
School land, Ed Rees et al 1-A.
18-21- 8 ——, C. H. Burton 1.
36-20- 4 School land, I. T. I. Oil Co. 1.
20-20- 5 Goodchief, Champlin Ref. Co. 1.
3-20- 6 Hammer, Blackwell O. & G. Co. 2.
9-20- 6 Duff, Magnolia Pet. Co. 1.
Fugate, Magnolia Pet. Co. 1.
Reding, Magnolia Pet. Co. 1.
21-20- 6 Freeman, Josey Oil Co. 6.
22-20- 6 Lesher, Fern O. & G. Co. 4.
Scott, Josey Oil Co. 3.
Smith, Westerly Oil Co. 3.
32-20- 6 H. Vogler, Magnolia Pet. Co. 5.
36-20- 6 Dodd, Davis & Tull 1.
20-20- 7 Lorans, Turner et al 1.
6-20- 8 George, Producers Cons. Oil Co. 11.

Shut Down

20-20-10 Tillock, Sheridan Oil Co. 1.
26-22- 5 Reed, Bu-Vi-Bar Pet. 1.
22-22- 7 Colbaugh, Victor Oil Co. 1.
Rigs, 9; wells drilling, 26; total, 35.

PONTOTOC AND GARVIN COUNTIES

Rigs

28- 5- 5 Copeland, La Salle et al 2.
29- 5- 5 Lewis, Bowles et al 1.
35- 5- 6 Logsdon, American O. & R. Co. 1.
15- 5- 8 Gilmore, Snowden & McSweeney 1.
16- 5- 8 Milner, Homaokla Oil Co. 1.
10- 4- 6 La Salle, Dixie Oil Co. 1.
6- 3- 7 Lloyd, Ada Dev. Co. 7.
15- 1-3w Cowan, Magnolia Pet. Co. 27.

Wells Drilling

31- 5- 5 Fee, La Salle et al 1.
33- 5- 5 Bennett, Shaw et al 1.
21- 5- 6 Graham, T. B. Slick 1.
28- 5- 6 Stringer, American O. & R. Co. 1.
16- 5- 8 S. Gilmer, Homaokla Oil Co. 1.
20- 5- 8 Harjo, W. R. Ramsey 1.
9- 4- 5 Craig, W. R. Ramsey 1.
23- 4- 7 Starritt, Lloyd et al 1.
12- 3- 1 Vaughn, Magnolia Pet. Co. 1.
5- 3- 4 Coon, Carter Oil Co. 1.
22- 1- 1 Russell, Day Oil Co. 1.
14- 1-3w Newberry, Magnolia Pet. 4.
15- 1- 3w Cowan, Magnolia Pet. 26.
17- 1-3w Derdeyn, Pope & Wilson 2.
Derdeyn, The Texas Company 14.
31- 1-3w Banks, The Texas Company 1.
31- 1-3w Tussey, Magnolia Pet. 1.

Shut Down

25- 5- 6 Patterson, Gillette & Krueger 1.
34- 5- 6 Wray, American O. & R. Co. 1.
20- 5- Gilcrease, Louisiana O. & R. Corp. 1.
35- 4- 6 Rayborn, Bowles et al 1.
14- 4- 7 Johnson, Henry et al 1.
25- 3- 1w Paxton, Guy Fisher et al 1.
28- 3- 4 Lloyd, C. F. Smith 1.
7- 3- 7 Walton, Ada Dev. Co. 1.
Rigs, 8; wells drilling, 25; total, 33.

POTTAWATOMIE COUNTY

Rigs

9- 9- 5 McKinley, Mid-Continent Pet. Co. 3.
Pool, Tidal Oil Co. 1.
32- 9- 5 Harbor, Independent O. & G. Co. 1.
13- 7-4e Green, Magnolia Pet. Co. 1.
14- 7-4e Simpkins, Independent & Darby 1.
Standridge, Independent O. & G. Co. & Darby Pet. 1.
15- 7- 4 Fillers, Independent O. & G. Co. & Darby Pet. 1.
17- 7- 5 Leiner, Magolia Pet. Co. 1.

Wells Drilling

22-11-2e Hollis, Wilcox O. & G. Co. 1.
26-11- 4 Kline, Sikes, Kilgore & Shaffer O. & R. 1.
28-10- 4 Tony, Central National Oil Co. 1.
16-10- 5 School land, Clark Edwards et al 1.
4- 9- 5 Cowden, Amerada Pet. Co. 1.
8- 9- 5 Dobbs, Philmack & Marland Oil 1, 2.
Knappenburger, Independent O. & G. & Darby Pet. Co. 1.
9- 9- 5 Gibson, Barnsdall Oil Co. 1.
Bryant, J. E. Crosbie 1.
McFarland, Gypsy Oil Co. 1, 2, 3.
Bryant, Magnolia Pet. Co. 1, 2.
McKinley, Mid-Continent Pet. Co. 1, 2.
Gram, Phillips Pet. Co. 1, 2, 3, 4, 5.
16- 9- 5 Bora, Gypsy Oil Co. 1.
Earl, Gypsy Oil Co. 1, 2, 3, 4.
School land, Gypsy Oil Co. 2, 4, 5.
Day, Pure Oil Co. 1, 2.
17- 9- 5 Strain, Gypsy Oil Co. 1, 2.
Stebbins, Pure Oil Co. 1.
Strain, Roxana Pet. Co. 1.
18- 9- 5 Forman, Sinclair Oil 1.
21- 9- 5 Day, Independent O. & G. Co. & Devonian Oil Co. 1.
24- 8- 4 Leah, Amerada Pet. Co. 1.
34- 8- 4 Brandenbury, Mid-Kansas O. & G. Co. 1.
16- 8- 5 School land, I. T. I. Oil Co. 1.
11- 7- 4 Billington, Magnolia Pet. Co. 1.
Clour, Magnolia Pet. Co. 1.
14- 7- 4 Banat, Magnolia Pet. Co. 1.
30- 7- 4 Davis, Wrightsman 1.
7- 7- 5 Bowers, Sinclair Oil Co. 1.
19- 7- 5 Harper, Magnolia Pet. Co. 1.

Shut Down

12-10- 3 Ives, Sikes, Kilgore & Shaffer 1.
9- 9- 5 Gram, Phillips Pet. Co. 6.
Pool, Tidal Oil Co. 1.
16- 9- 5 Bora, Gypsy Oil Co. 2.
10- 6- 2 McCahey, Davis & Detrick et al 1.
Rigs, 8; wells drilling, 52; total, 60.

SEMINOLE COUNTY

Rigs

33-11- 8 Williams, Barnsdall & Mid-Continent Pet. Co. 10.
33-10- 6 Davis, Mid-Continent Pet. Co. 2.
Epperson, F. J. Searight 5.
34-10- 6 Grayson, Mid-Continent Pet. Co. 4.
28-10- 7 Blevins, Continental Oil Co. 1.
4-10- 8 Jackson, The Texas Company 5-A.
5-10- 8 Roberts, Sinclair Oil Co. 1.
2- 9- 5 Bruner, Barnsdall Oil 1.
3- 9- 5 Walker, Barnsdall Oil 1.
10- 9- 5 S. Pack, Barnsdall Oil 2.
Peters, Barnsdall Oil 2, 3.
Simpson, Magnolia Pet. Co. 3.
11- 9- 5 Davis, Barnsdall Oil 2.
15- 9- 5 Anderson, Amerada Pet. Co. 1-A.
F. Anderson, Amerada Pet. Co. 7.
Talsey, Barnsdall Oil 2.
Anderson, McGraw & Boughman 3.
3- 9- 6 Aldridge, Pure Oil 2.
4- 9- 6 Cudjo, Gypsy Oil 2.
Cluck, Wilcox O. & G. 4.
24- 9- 6 Carter, Tidal Oil 7.
25- 9- 6 Harjo, Independent O. & G. Co. 1, 2, 8.
26- 9- 6 Bowlegs, I. T. I. Oil 6.
27- 9- 6 Jackson, Carter Oil 1.
Lukes, Carter Oil 6.
34- 9- 6 Strother, Carter Oil 3.
T. Cudjo, Gypsy Oil 2.
35- 9- 6 J. Cudjo, Independent & Atlantic Oil 3.
Butler, Gypsy Oil 4.
Butler, McCullough Oil 4.
Born, T. B. Slick 2.
Giblet, T. B. Slick 4.
36- 9- 6 S. Harjo, Carter Oil 1.
July, Gypsy Oil 1.
Strother "B," Pure Oil 2, 3, 4, 5.
10- 9- 7 Graull, Barnsdall Oil 1.
11- 9- 7 Amma, Jarvis & Holmes 1.
18- 9- 7 Drewery, McCullough Oil 1.
29- 9- 7 Johnson, Barnsdall Oil 1.
7- 9- 8 McDaniel, Independent O. & G. 3.
18- 9- 8 Island, Oklavania & Carter Oil 2.
4- 8- 6 Dosey, Gypsy Oil 1.
10- 8- 6 Taylor, Atlantic O. P. Co. 2, 3.
Cumsey, Gypsy Oil 1.
Taylor, Mid-Continent Pet. 4.
Taylor, Sinclair Oil 1, 2.
11- 8- 6 Jones, Twin State Oil 1.
13- 8- 6 Davis, Magnolia Pet. 1.
14- 8- 6 Harjoche, Carter Oil 3, 4.
Lacey, Empire G. & F. Co. 5, 6.
Reed, Pure Oil 13, 15, 16.
Harjo, Sinclair Oil 4.
15- 8- 6 Walker, Carter Oil 3.
Livingston, I. T. I. Oil 7.
Goforth, I. T. I. Oil 9.
Wilmouth, I. T. I. Oil 2.
Bowlegs, Minnehoma Oil 3.
16- 8- 6 Jones, Atlantic O. P. Co. 4.
22- 8- 6 Billington, I. T. I. Oil 1.
Bowlegs, I. T. I. Oil 2.
Bowlegs, Mid-Continent Pet. 1.
Bowlegs, McCullough Oil 1.
Walker, Sinclair Oil 2.
24- 8- 6 Barnett, I. T. I. Oil 2.
9- 8- 8 Grisso, Magnolia Pet. 1.
15- 8- 8 W. Davis, Independent O. & G. Co. 1.
Davis, I. T. I. Oil 1.
2- 7- 5 Lawson, Amerada Pet. Co. 1.
7- 7- 6 Palmer, Simon & Bean 1.
30- 7- 6 Palmer, Independent O. & G. 1.
22- 7- 7 Coppage, Magnolia Pet. 3.
Coppage, Transcontinental Oil 6.
18- 6- 8 Phillips, Carter Oil 1.
27- 9- 6 Strother, Prairie O. & G. 7, 8.
10- 8- 6 Harber, Prairie O. & G. 2.
36- 9- 6 Mason, Prairie O. & G. 1.
2- 8- 6 Thomas, Prairie O. & G. 1.

Wells Drilling

33-11- 8 Williams, Barnsdall & Mid-Continent Pet. 9.
Pierce, Continental Oil 1, 12, 13.
Thompson, McMan et al 1.
Thompson, Pure Oil 1-A, 2.
Pierce, Sinclair Oil 13.
14-10- 5 Jarvis, McCullough Oil 1.
26-10- 5 Turner, Sorry & Swartz 1.
26-10- 6 Scott, Carter Oil 1.
33-10- 6 Davis, Mid-Continent Pet. 1.
Epperson, Searight et al 2, 3, 4.
Youngblood, Searight et al 1-A.
34-10- 6 Stewart, Carter Oil 5.
Grayson, Mid-Continent Pet. 5, 6.
35-10- 6 Harjo, Wrightsman Oil 1.
12-10- 7 Micco, Gypsy & Prairie 1.
34-10- 7 Tiger, Gypsy Oil 1.
4-10- 8 Dunn, Central Natl. Oil 4.
Yarbough, Sinclair Oil 5.
9-10- 8 Hill, Sinclair Oil 2.
1- 9- 5 Ingram, Barnsdall Oil 1.
3- 9- 5 Edmonds, Empire G. & F. 1.
10- 9- 5 S. Pack, Barnsdall Oil 1.
S. Harjo, Barnsdall Oil 1.
Peters, Barnsdall Oil 1.
Peters, Gypsy Oil 1, 2, 3.
Bruner, Independent O. & G. 3.
Lena, Magnolia Pet. 2, 3.
Wilmouth, The Texas Company 2, 3, 4.
11- 9- 5 Davis, Barnsdall Oil 1.
J. Davis, Barnsdall Oil 2.
B. Carter, Gypsy Oil 1, 2.
Holmesley, Magnolia Pet. 1.
Sparks, Magnolia Pet. 2, 4, 5.
12- 9- 5 Jamessay, Magnolia Pet. 1.
14- 9- 5 Winton, Barnsdall Oil 1.
Dunaway, Phillips Pet. 1.
15- 9- 5 F. Anderson, Amerada Pet. 3, 4, 5, 8.
D. Smith, Barnsdall Oil 1, 2.
Sebolka, Barnsdall Oil 1.
D. Smith, Gypsy Oil 1.
Anderson, Roxana Pet. 1.
Jones, Sinclair Oil 1.
2- 9- 6 E. Kiker, Carter Oil 1.
3- 9- 6 Frazier, Carter Oil 3, 4, 5.
Aldridge, Pure Oil 1.
Strother, Roxana Pet. 1.
Polly, Sinclair Oil 2.
4- 9- 6 Davis, Carter Oil 4, 5, 6.
Jeming, Twin State Oil 1.
Cluck, Wilcox O. & G. 1, 2, 3.
10- 9- 6 Evans, Pure Oil 1.
Harbor, Roxana Pet. 1, 2.
Noble, Superior Oil 2.
13- 9- 6 Knapp, Carter Oil 4.
Marcy, I. T. I. Oil 1.
14- 9- 6 Henry, Barnsdall Oil 1.
F. Killing, Carter Oil 5, 6.
Rentie, Mid-Continent Pet. 5, 7.
Mayhue, The Texas Company 1, 2.
15- 9- 6 Johnson, Gypsy Oil 1.
22- 9- 6 Harjo, Kingwood Oil & Roxana Pet. 3, 4, 5, 6.
Lasley, Roxana Pet. 1, 2.
Harbor, Roxana Pet. 2.
Grisso, Sinclair Oil 1.
23- 9- 6 Grisso, Carter Oil 7, 8.
M. Killing, Carter Oil 4, 6, 7, 8, 9, 10, 11.
Vierson, Carter Oil 1, 2, 3, 4.
Fixico, Independent O. & G. 3, 4.
Fixico, Transcontinental & Sinclair 3, 4.
23- 9- 6 Harjo, Tidal Oil 3, 8.
24- 9- 6 J. Carter, Gypsy Oil 3.
James, I. T. I. Oil 5-A.
Tayoche, Mid-Continent Pet. 2, 7.
Mahardy, Tidal Oil 6, 5, 6.
25- 9- 6 Gross, Empire G. & F. 1, 2.
D. Harjo, Gypsy Oil 2, 3.
Franks, Magnolia Pet. 2, 3, 4.
Harjo, Tidal Oil 1.
26- 9- 6 J. Wolfe, Gypsy Oil 5, 7.
Bowlegs, I. T. I. Oil 9, 10, 11, 12.
Strother, Pure Oil 15.
Fixico, Tidal Oil 2-A, 6-A, 8.
27- 9- 6 Gilliland, Carter Oil 1.
Lukes, Carter Oil 3.
Strother, Independent & Atlantic 1.
Strother, Phillips Pet. 2, 3, 4.
31- 9- 6 Cudjo, Barnsdall Oil 1.
34- 9- 6 Jones, Barnsdall Oil 2, 3, 4.
W. Cudjo, Carter Oil 1.
Strother, Carter Oil 2.
Wilson, Empire G. & F. Co. 2, 3.
T. Cudjo, Gypsy Oil 1, 3.
L. Jones, Turman Oil 2, 3, 4.
W. Jones, Turman Oil 1.
35- 9- 6 Cudjo, Atlantic O. P. Co. 4.
J. Cudjo, Independent & Atlantic 2.
Cudjo, Carter Oil 4.
Simpson, Carter Oil 1, 2.
Butler, Gypsy Oil 3.
Butler, McCullough 2, 3.
Cudjo "A," Sinclair Oil 6.
Cudjo "B," Sinclair Oil 3.
Born, T. B. Slick 1.
R. Cudjo, T. B. Slick 2, 3.
Franks, T. B. Slick 6, 8.
Giblet, T. B. Slick 2.
Giblet, T. B. Slick 3.
Cudjo, Tuaman Oil 4.
36- 9- 6 Strother "B," Pure Oil 1.
7- 9- 7 Kepeya, Barnsdall Oil 1.
8- 9- 7 Thelocco, Sinclair & Phillips Pet. 1.
15- 9- 7 Jonah, Pure Oil 1.

16- 9- 7 Bull, Marland & Mid-Continent Pet. 1.
17- 9- 7 Warrior, Sinclair & Phillips Pet. 1.
19- 9- 7 Hagler, Shaffer O. & R. 1.
20- 9- 7 Pepper, Magnolia Pet. 1.
21- 9- 7 Roger, Gypsy Oil 1.
23- 9- 7 Stepney, Gypsy Oil 1.
28- 9- 7 Markwell, Magnolia Pet. 1.
Markwell, Pure Oil 1.
31- 9- 7 Mills, I. T. I. Oil 1.
7- 9- 8 Alexander, Independent O. & G. 1, 2.
Cobb & Hill, Independent O. & G. 4.
T. Cobb, Independent O. & G. 1.
W. Jefferson, Independent O. & G. 2.
Lowery, Jarvis 1.
Butler, The Texas Company 1.
16- 9- 8 Drake, Plover Drlg. Co. 1.
3- 8- 6 Jacksey, Mid-Kansas Oil 1.
5- 8- 6 Seminole, Gypsy Oil 1.
9- 8- 6 C. Jones, Sinclair Oil 1.
Sally, Tidal Oil 1.
10- 8- 6 Taylor, Atlantic O. P. Co. 1.
Taylor-Mid-Continent Pet. Co. 1, 2, 3.
Harjoche, Tidal Oil 1.
11- 8- 6 Murrow, Barnsdall Oil 1, 2.
L. Jones, Sinclair Oil 1.
13- 8- 6 Grayson, Atlantic O. P. Co. 1.
Davis, I. T. I. Oil 2, 3, 4.
Fay, I. T. I. Oil 1, 2.
14- 8- 6 Harjoche, Carter Oil 1, 2.
Lacey, Empire G. & F. Co. 2, 3, 4.
Reed, Pure Oil 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14.
Lacey, Shaffer O. & R. 1, 2, 3, 4.
Harjo, Sinclair Oil 1, 2, 3.
Reed, The Texas Company 1, 2.
15- 8- 6 Rascoe, Amerada Pet. 1, 2, 3, 4, 5, 6, 7, 8.
Bowlegs, Carter Oil 1, 2, 3.
Walker, Carter Oil 2.
Walker Gypsy Oil 2, 3, 4, 5, 6, 7, 8, 9.
Livingston, I. T. I. Oil 2, 3, 4, 5, 6, 8, 9.
Goforth, I. T. I. Oil 1, 1-A, 2-A, 3, 4, 5, 6, 7, 8.
Walker, I. T. I. Oil 1, 2, 3, 4, 5, 6.
Wilmouth, I. T. I. Oil 1.
Bowlegs, Minnehoma Oil 1, 2.
16- 8- 6 Jones, Atlantic O. P. Co. 1, 2, 3, 5, 6.
Jones, Marland Oil 1.
Taylor, Roxana Pet. 1, 2, 3, 4.
Fox, T. B. Slick 1.
17- 8- 6 Strother, Magnolia Pet. 1.
20- 8- 6 Rogers, Empire G. & F. 1.
21- 8- 6 McCelsey, Carter Oil 1.
Coker, Independent & Marland Oil 1.
22- 8- 6 Bowlegs, I. T. I. Oil 1.
Adam, Sinclair Oil 1.
Bowlegs, Sinclair Oil 1.
Walker, Sinclair Oil 1.
23- 8- 6 Fleet, Atlantic O. & P. 1, 2.
Hilly, Carter Oil 1.
Wise, Carter Oil 1, 2, 3, 4, 5.
24- 8- 6 Barnett, I. T. I. Oil 1.
Work, I. T. I. Oil 1.
Youngblood, I. T. I. Oil 1, 2, 3.
Work, Mid-Continent Pet. 1.
28- 8- 6 McNac, Barnsdall Oil 1.
Johnson, Independent & Marland 1.
33- 8- 6 Brown, Gypsy Oil 1.
7- 8- 7 Sturgeon, Empire G. & F. 1.
14- 8- 7 Norvell, Magnolia Pet. 4.
19- 8- 7 Harjoche, Marland Oil 1.
26- 8- 7 Ramsey-Jackson, Magnolia Pet. 1.
15- 8- 8 Sewell, J. E. Crosby et al 1.
22- 8- 8 Holwell, Magnolia Pet. 1.
29- 8- 8 M. Walker, Dixie Oil 3.
Brown, Homaokla Oil 2-A.
W. Walker, Independent O. & G. 3.
Joshua, Magnolia Pet. 2.
30- 8- 8 M. Johnson, W. R. Ramsey 1.
31- 8- 8 Casey, Carter Oil 9.
Sampson, Ramsey 1.
32- 8- 8 Long "B," Dixie Oil 2.
31- 8- 8 Amos "A," Producers & Refiners 11, 14.
Salinda, Producers & Refiners Corp. 2.
33-10- 6 Kinkade Prairie O. & G. 8, 10.
27- 9- 6 Strother, Prairie O. & G. 6.
10- 9- 6 Carter, Prairie O. & G. 2, 3.
32- 8- 8 Parker, Dixie Oil Co. 3, 4.
I. Walker, Dixie Oil Co. 4.
W. J. Long, Independent & Continental 4.
Bagwell, Magnolia Pet. 4.
B. Lena, Magnolia Pet. 5.
R. Jones, Magnolia Pet. 6.
Jones, Shaffer O. & R. 9, 10.
21- 8- 6 Harbison, Prairie O. & G. 1.
33-10- 6 Cannon, Prairie O. & G. 1.
Houck, Prairie O. & G. 1.
24- 9- 5 Baker, Prairie O. & G. 1.
11- 9- 5 Stidham, Prairie O. & G. 1.
1- 7- 6 H. Dickson, I. T. I. Oil 1.
22- 7- 7 Hotulka, Barnsdall Oil 1.
14- 7- 7 Jackson, Empire G. & F. 1.
22- 7- 7 Jackson, Magnolia Pet. 1.
28- 7- 7 Cudjo, T. B. Slick 1.
32- 7- 7 Marshall, I. T. I. Oil 1.
32-10- 6 Dare, Prairie O. & G. 1.
30-10- 6 Cash, Prairie O. & G. Co. 1.
23- 8- 6 Gahagan, Prairie O. & G. 1, 2.
10- 8- 6 Harber, Prairie O. & G. 1, 3.
22-10- 6 Weimer, Prairie O. & G. 1.
23- 8- 6 Whitney, Prairie O. & G. 1, 2.
34- 8- 6 Aldridge, Prairie O. & G. 1.
17-10- 6 Burner, Prairie O. & G. 1.
5- 6- 7 Vierson, Magnolia Pet. 1.
6- 6- 8 Reed, Hoofer Oil Co. 1.
24- 5- 5 Nitley, Riverside O. & R. & Kinney 1.

Shut Down

33-10- 6 Epperson, F. F. Searight 8.
15-10- 8 Bruner, Wilcox O. & G. 9.
1- 9- 5 Sango, F. J. Searight 1.
2- 9- 5 Williams, Magnolia Pet. 1.
15- 9- 5 Talsey, Barnsdall Oil 2.
4- 9- 6 Lula, W. B. Pine 1.
10- 9- 6 Noble, Superior Oil 1.
14- 9- 6 Mayhue, The Texas Company 3.
15- 9- 6 Noble, Tidal Oil 1.
20- 9- 6 Harjo, C. J. Wrightsman 1.
24- 9- 6 Mahardy, Tidal Oil 5.
21- 9- 7 Island, Papoose Oil Co. 1.
33-10- 6 Kinkade, Prairie O. & G. 9.
Houck, Prairie O. & G. 2.
18- 9- 8 Smith, Winona Oil 2.
9- 7- 6 Litka, I. T. I. Oil 1.
22- 7- 7 Coppage, Magnolia Pet. 1, 2.
Coppage, Transcontinental Oil 4.
33- 6- 6 Charty, Palmetto Oil 1.
Rigs, 90; wells drilling, 400; total, 490.

STEPHENS AND COTTON COUNTIES
Rigs

3- 1-5w Harrell, Magnolia Pet. Co. 1.
6- 1-4w Morgan, Lewis, Clark & Montgomery 1.
28-1s-8w Taliaferro, McAllister et al 2.
34-1s-8w Nigh, H. O. Farley 1-A.
Kaygay, Magnolia Pet. Co. 17.
24-1s-4w Stewart, Gilmer et al 2.
13-2s-8w Dierkes, Beard & Cobb 1.

Wells Drilling

1- 2-5w Gozo, Magnolia Pet. Co. 1.
2- 2-5w Gozo, Carter Oil Co. 3.
Garvin-Simms, Carter Oil Co. 8.
12- 1-6w Frensley, Crude Oil Co. 1.
Frensley, Hall et al 1-A.
2- 1-5w M. Payne, Magnolia Pet. Co. 1.
18- 1-5w W. Payne, George Pace 1.
29- 1-5w W. Payne, Carter Oil Co. 1.
31- 1-5w H. C. Payne, Magnolia Pet. Co. 1.
V. Payne, Magnolia Pet. Co. 1.
32- 1-5w Charleson, Magnolia Pet. Co. 3.
Charleston, Carter Oil Co. 2.
18- 1-4w Chisholm, Magnolia Pet. Co. 1-A.
32-1s-10w Fink, Garvin & Urice 1-A.
12-1s-9w Reeder, Margay Oil Corp. 2.
25-1s-9w Edmundson, Carter Oil Co. 1.
Massey, Gamble et al 3.
D. Russell, Magnolia Pet. Co. 12, 13.
36-1s-9w School land, W. H. Gant 5.
19-1s-8w Bridenthal, Ellis Drlg. Co. 7-B.
27-1s-8w Taliaferro, Harry Hanbury 5.
Taliaferro, Pearce & Brown 2.
28-1s-8w Taliaferro, Ft. Ring & L. Sykes 3.
30-1s-8w Massey, Garvin Drlg. Co. 1.
Clarkson, Winkler & McQueen 1.
34-1s-8w Burke, Davis Malernee 3.
8-1s-5w Parker, Magnolia Pet. Co. 1.
9-1s-5w Morris, Carter Oil Co. 1.
2-1s-4w Goodwin, McBride et al 1.
12-1s-4w James, R. S. Scott 1.
13-1s-4w Underwood, F. W. Merrick et al 1.
Dixon, Merrick & Gault 1-A.
Krebs, Skelly Oil Co. 2, 3.
24-1s-4w Stewart, Gilmer et al 1.
Franklin, Wirt Franklin 1-A.
22-2s-11w Koehler, J. W. Ray 1.
5-2s-8w Miller, Empire G. & F. Co. 1.
12-2s-8w Marrey, Pace et al 2.
14-2s-5w Hollingsworth, Magnolia Pet. 6.
3-2s-5w Webb, Magnolia Pet. Co. 7.
3-3s-5w Sutherland, Fidelity O. & G. Co. 1.

Shut Down

14- 2-5w Truitt, Rogers et al 2.
1- 1-9w Ball, Continental Dev. Co. 1.
28-1s-8w Nelson, V. A. Kidney 3.
29-2w-7w Wilson, Comanche O. & G. Co. 1.
Rigs, 7; wells drilling, 48; total, 55.

TULSA COUNTY
Wells Drilling

10-19-10 White, E. A. Craig et al 1.
Hoyer, Wimms Oil Co. 1.
14-19-10 Bell, Holmes et al 2.
20-19-10 Chrisholm, Holmes et al 1.
25-19-10 Star, W. E. Holmes et al 1.
15-19-11 S. Fife, E. R. Minshall et al 5.
A. Fife, Glidden Oil Corp. 4.
S. Fife, Glidden Oil Corp. 2.
Fife, Mitchell Bros. 1.
22-19-11 A. Fife, Smith & Christie 1.
32-19-12 Company, Sam McPherson et al 1.
11-18-12 Covey, O. N. West, 1-A.
7-17-13 Smith, E. Cornelius 1-A.
18-17-13 Berryhill, Welch et al 1-A.
34-17-13 Call, McCready O. & G. Co. 1.

Shut Down

16-18-13 Rentie, L. C. Hivick 3.
34-17-12 Glicrease, S. W. Anthony 2.
1-17-13 Taylor, E. A. Hawley 1.
34-17-13 Herrick, W. A. McCullough 2.
Wells drilling, 19; total, 19.

OKLAHOMA PANHANDLE
CIMARRON COUNTY
Wells Drilling

24- 6- 2 ———, Jake G. Phillips 1.
22- 5- 2 ———, Sinclair Oil Co. 1.
27- 5- 5 State, Ramsey Bros. 1.
School land, Ramsey Pet. Co. 1.
25- 3- 7 Israel, Gladys Belle Oil Co. 1.

Shut Down

2- 2- 9 Smaltz, Fenton, Brookins & Flowers 1.

TEXAS COUNTY
Wells Drilling

28- 3-13 Zea, Wilcox O. & G. Co. 1.
4- 1-12 Ellison, Haley, Garber & Pulse 1.
26- 1-15 Hitch, H. & H. Oil Co. 1.
11- 1-18 Price, Three Way Oil Co. 1.

Shut Down

23- 2-18 Graves, Connelly, Trammell & Danner 1.
4- 1-13 Becker, Dutton & Hill 1.
5- 1-9 Tansey, Connelly, Trammell & Danner 1.
Wells drilling, 13; total, 13.

MISCELLANEOUS COUNTIES
Rigs

Grant County—
24-27- 3w Birdston, Burns & Beasley 1.
Noble County—
12-21- 3e Sawyer, Bu-Vi-Bar Pet. Co. 1.
Kingfisher County—
6-16-17 Campbell, Pet. Eng. Core Drlg. Co. 1.
23-15- 5 Davison, Reiter-Foster Oil Co. 1.
Pittsburg County—
11- 7-18 Cohler, San Bois Gas Co. 1.
Cleveland County—
22-10- 2w Donovan, Cromwell & Franklin 1.
Beckham County—
21- 9-23w Hawkins, Bucy & Clay 1.
24- 9-23w Davis, Northland Syndicate 1.
35- 9-22w Abbott, Perffet et al 1-A.
Caddo County—, Abernathy et al 1.
1- 5-10w Edwards, Magnolia Pet. Co. 3.
Jefferson County—
24-4s-5w Dukes, McBybee et al 1.
23-6s-6w Ryan, Magnolia Pet. Co. 1.
4-6s-5w Gibson, Carter Oil Co. 1.
Murray County —
17- 1- 2e Wolfe, Revels & Magee 1.
Wells Drilling and Shut Down
(Shut down wells indicated by *)
Grant County—
22-29- 3w White, Amerada Pet. Co. 1.
6-28- 3w Snyder, Otstot Dev. Co. 1.
28-27- 6w Bradley, Miller Bros. et al 1.
18-27- 5w Custard, J. W. Bailey et al 1.
22-27- 3w Lane, Blackwell O. & G. Co. 4.
22-27- 3w Flood, Larutan Fuel Co. 1*.
34-26- 4w Royce, Brazill & Moses 1*.
15-26- 3w Sherrer, Flannigan & Dedman 1*.
22-25- 4w Valiner, Cowden 2.
Noble County—
29-24- 1w Reed, Mid-Continent Pet. Co. 6*.
1-24- 1e 101 Ranch, Geo. Miller 1.
1-22- 2e White, K-D Oil Co. 4.
15-21- 2w Sams, Magnolia Pet. Co. 1*.
Phearson, Magnolia Pet. Co. 1.
7-21- 2w Williams, R. L. Corley 1*.
Harper County—
14-25-22w Cooper, Hoffer Oil Co. 1.
Woodward County—
32-24-17w Simmons, Otstot Dev. Co. 1.
25-21-21w Elmore, Sharon Oil Co. 1*.
Major County —
4-23-16 w Parker, Henry Randon 1*.
36-22-14w Cheyenne Basin, The Texas Prod. Oil Co. 1*.
36-21-11w Gray, Frantz & Slick 1.
Ellis County—
9-21-25w ———, Oklahoma Northern Oil 1.
Kingfisher County—
16-19- 5w Kelly, M. Kelly et al 1.
25-17- 5w Pool, Ramsey Bros 1.
27-16- 6w Sturgeon, McKenna & Crawford 1*.
Dewey County —
9-18-15w Perfect, Huckleby McCoy 1.
Canadian County—
9-14- 6w Platt, A. D. Spears et al 1*.
18-13-10w North, Carroll Oil Corp. 1*.
29-13- 5w Pazourick, T. B. Slick & Franks 1.
28-11- 5w Dalton, Ramsey Bros. 1.
Oklahoma County—
18-13- 5w Lufkin, Slick & Bailey 1*.
10-12- 3w Edwards, Cromwell 1.
9-11- 1w Gludoracey, Bailery & Ramsey 1.
Mayes County—
8-20-19 Drew, J. L. Dixon 1.
McIntosh County—
12-12-16 Love, J. A. Sheppard et al 3.
27-11-15 Rush, Simpson Fell Oil Co. 1.
Sequoyah County—
15-10-26 Fox, H. H. Orr et al 1*.
Pittsburg County—
39- 9-16 Smith, J. L. Pattison 1.
Haskell County—
10- 9-18 Sanders, Marion Oil Co. 1*.
Cleveland County—
7- 9- 1w Alexander, Gault-Brown 1.
15- 7- 1w Vandeer, Sooner Oil Co. 1.
11- 6- 1w Lefleure, Magnolia Pet. Co. 1.
25- 6 1e Byrd, Wiser Oil Co. 1.
Beckman County—
35- 9-25w Adams, W. S. Nelson 1*.
25- 923w Beagle, Magnolia Pet. Co. 1.
25- 9-22w McGeen, W. R. Dukes, 3.
Kiowa County—
5- 618w Bonham, A. C. Varner 1.
6-2s-16w ———, Landfair et al 1.
Caddo County—
22- 6-10w Jacobs, English Drlg. Co. 1.
29- 6-12w Gilbreath, W. J. Hartley 1*.
2- 5 9w Mitchell, Gorton Trust Co. 2.
11- 5- 9w Fee, Belle Hudlund 1.
Lacky, Magnolia Pet. Co. 5.
12- 5- 9w Rigney, Livermore 2.
Rigney, J. P. Shelton et al 1*.
Jackson County—
15-1s-20w Ennis, Pet. Investment Co. 1*.
Tillman County—
13-1s-15w Snelly, Ooasis Oil Co. 1*.
21-3s-16w Deaner, P. C. Dean, McDowell & Lewis 1.
Jefferson County—
24-6s-6w Ryan, Skelly Oil Co. 1.
24-7s-6w Smith, Magnolia Pet. Co. 1.
26-7s-6w Spain, Gypsy Oil Co. 1.
Johnson County—
26-4s-5e Chastain, Deese et al 1*.
Marshall County—
35-5s-3e Castle, Galt Brown 1.
11-5s-4e Chapman, Bilbo et al 1*.
17-5s-6e Walter, Magnolia Pet. 1.
Love County—
10-6s-3e Laten, R. M. Boring et al 1.
28-6s-2e Fee, Westheimer 1*.
Rigs, 15; wells drilling, 67; total, 82.

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	16	1,365	4	0
Cowley	11	290	4	2
Chautauqua & Elk	12	1,270	4	1
Greenwood	37	1,795	15	0
Miami	21	500	16	0
Sumner	14	4,573	6	0
Miscellaneous	40	1,634	13	3
Total March	151	11,427	62	6
Total February	114	9,311	55	6
Difference	37	2,116	7	0

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Butler	19	43	62
Chautauqua & Elk	5	16	21
Cowley	6	36	42
Greenwood	22	48	70
Lyon	0	11	11
Marion	5	11	16
Rice	1	12	13
Sumner	7	29	36
Woodson	1	9	10
Miscellaneous	10	86	96
Total March	76	301	377
Total February	75	315	390
Difference	1	14	13

BUTLER COUNTY

20-26-3 Hoerman, Barnsdall Oil 1 .. 150
29-25-4 Varner, Lenoir et al 2. ..... dry
1-27-7 Lucas, White Eagle, O. & R. et al 1 ..... dry
35-27-4 Starkey, Empire G. & F. 14 .. 60
26-26-8 Drum Bitler, Rogers et al 12 140
17-27-6 Oldsbury, Phillips Pet. Co. 1. 40
33-27-6 Stege, Magnolia Pet. 1. 180
13-27-7 Parker, Phillips Pet. 1. 150
P. Seward, Phillips Pet. 5..... 150
14-27-7 Harris, Sinclair Oil 2. 150
26-28-7 Ramp, B. G. & M. Oil Co. 1.. 20
29-26-8 Drum Bitler, Rogers et al 13. 90
31-26-8 Drum Bitler "B", Rogers et al 2 ..... dry
4-28-6 Blakeman, Magnolia Pet. 4 .. 220
18-28-7 Morti, Abel, Finney et al 1.. dry
33-29-8 Hanna, Roth & Co., 11. 15

Wells completed 16
Production 1,365
Dry 4

COWLEY COUNTY

30-30-3e Beiswanger, Pyle et al 1..... dry
6-31-3e Cook, Sinclair Oil 1. ..... dry
13-31-7 McCormick, Empire G. & F. 1. dry
4-32-7 Reynolds, Forrester et al 1... 75
15-32-4e Wallace, Tidal Oil & Skelly Oil Co. 3 50
22-32-4e Townsite, Foster, Deal et al 1. 45
6-35-3e Buckles, Marland Oil 1..... dry
15-32-4 School land, J. A. Hull 4..... 30
22-32-4 City of Winfield, Roth & Faurot 1 ..... gas
6-32-5 Brown, Ark. Fuel Oil 3..... 90
5-33-5 Bell, Neely O. & G. 1..... gas

Wells completed 11
Production 290
Dry 4
Gas 2
Gas production 8,500,000

CHAUTAUQUA & ELK COUNTIES

4-29-9 Britton, McCullough & Tolbot 1 ..... dry
17-29-10 Keck, Ark. Fuel Oil 1..... gas
10-31- 8 Denton, Page Oil 1 ..... dry
16-31- 9 Logston "A", Smith, Ash et al 1 30
27-33-11 Schoelkoph, Prairie O. & G. 9. 100
1-32-10 Oliver, Griffith, Bell et al 2... 25
13-29- 8 Porter, Empire G. & F. 5..... 25
11-31- 9 Crist, Ohio Fuel Oil 1..... dry
14-31-10 Leffingwell, Union Gas Corp. 8 540
28-31-10 Johns, Landon et al 1..... dry
14-31-10 Leffingwell, Union Gas Corp. 7 250
Leffingwell, Union Gas Corp. 9 300

Wells completed 12
Production 1270
Dry 4
Gas 1
Gas production 3,000,000

GREENWOOD COUNTY

14-22-11 Duby, Empire G. & F. 11. 35
7-22-13 Storer, Empire G. & F. 2. .... dry
15-23-9 Skelly-Teter, Skelly Oil 1. 275
21-23-11 Edwards, Empire G. & F. 4. 275
15-23-13 Shadell, Tidal Oil 12. 50
18-24-11 Dugan, Empire G. & F. 3. 70
14-22-11 Hing, Empire G. & F. 10..... 100
13-22-12 Schultz, Schwartz et al 1..... dry
32-22-13 Lue, Skelly Oil 2..... dry
8-23-10 Culver, Leonard Pet. et al 1. dry
8-23-12 Martin, Mathews et al 1..... dry
4-23-13 Inthurm, Gore & Skelly 2..... 10
6-23-13 Stour, Mid-Kansas 1 ..... dry
16-26-11 Hughes, Brown & Emerson 1. dry
25-27-10 Hanson, Marshall et al 1..... dry
2-28-11 Schultz, McCullough et al 1... dry
2-22-10 Bradfield, Syndicate Oil 7 .... dry
12-22-11 Inthurm, Empire G. & F. Co. 2 10
14-22-11 Gravette, Empire G. & F. Co. 4 dry
24-22-11 Broddock, Fisher, Lauck et al 1 dry
22-23-10 Tucker, Roth, Faurot & Manhattan Oil 4 20
26-23-11 Ellis, Mid-Cont. Pet. 2 10
12-23-12 Wengler, Simmons & Rhodes 1 dry
17-24-11 Robertson, Sinclair Oil 1..... 60
25-25-8 Jackson, Mid-Kansas Oil 1.... 210
2-22-10 Sheppard, Manhattan Oil Corp. 3 35
19-22-10 Browning, Sinclair Oil 53 125
20-22-10 Browning, Sinclair Oil 54..... 125
14-22-11 Hood, Roxana Pet. et al 1..... 170
27-22-11 Wick, Skelly Oil 19 110
10-22-12 Bolen, Darby et al 2..... 75
36-22-12 Fankhouser, Empire G. & F. 1 150
3-23-12 Schwab, Sullivan et al 1 ..... dry
4-23-13 Inthurm, Haverhill Pet. et al 17 40
30-25-11 Whipler, Jennings et al 1..... dry
10-26-8 Hull, Kinney Ref. et al 8..... 25
22-24-12 Johnson "B," The Prairie O. & G 1 25

Wells completed 37
Production 1795
Dry 16

MIAMI COUNTY

32-16-25 Fee, Gardner 1 ..... dry
29-16-24 Snauffer, Geo. D. Warr 1 .... dry
4-17-24 Jones, James Bruen 1..... dry
20-16-24 Sunley, H. B. Gooch 5..... 100
31-16-24 Courtney, Spencer et al 1..... dry
21-16-24 Woods, H. B. Gooch 1 ..... dry
20-16-24 Hanson, G. E. Phillips (agent) 3 100
Young, G. E. Phillips 5 100
12-17-24 Wood, J. Weisser & M. N. Stark 1 ..... dry
17-16-24 Nevins, Humphreys et al 1... dry
19-16-24 Crawford, H. B. Gooch 1 .... dry
Crawford, H. B. Gooch 1..... dry
21-16-24 Woods, Duffield 1 ..... dry
15-16-24 Gintz, H. B. Gooch 1 ..... dry
16-16-24 Dickey, H. B. Gooch 1..... dry
27-16-24 Weaver Est., Unknown 1 ..... dry
33-16-24 Starey, James Bruen 1 ..... dry
20-16-24 Hanson, G. E. Phillips (agent) 4 100
Sunley, H. B. Gooch 4..... 100
17-16-24 Bendorf, Phillips Bros. 11 ..... dry
23-16-24 Coler, J. Weisser et al 1..... dry

Wells completed 21
Production 500
Dry 16

SUMNER COUNTY

25-31-2e Herrick, Wentz Oil 4 ..... dry
25-32-1e Wirth, De Hart et al 1..... dry
4-32-2e Reese, Magnolia Pet. 1..... dry
9-30-1w La Force, Champlin O. & R. 1. dry
30-30-2e Alter, Phil-Mac Oil 1 ..... dry
25-31-2e Reitz, Derby Oil 1 960
Mason, Roxana Pet. Co. 2..... 428
Mason, Roxana Pet. Co. 3..... 500
Rutter, Roxana Pet. Co. 2..... 1000
36-31-2e Island, Selby O. & G. Co. 1... 210
25-33-2e Swain, Marland Oil 1 225
24-31-2e Everts, Amerada Pet. 1..... dry
25-31-2e Wiles, Roxana Pet. 1 800
Riverbed, Roxana Pet. 3 450

Wells completed 14
Production 4573
Dry 6

MISCELLANEOUS COUNTIES

Barber County—
13-33-13 Alexander, Shaffer O. & R. 1... gas
Chase Counpty—
29-18-7 Lipps, Empire G. & F. 7..... dry
15-21-9 Camon, Empire G. & F. Co. 1. dry
25-17-7 Lipps, Neibert et al 3..... gas
30-18-7 Lipps, Preston & Pasewalt 4.. dry
32-18-7 Lipps, Empire G. & F. Co. 8... gas
Harvey County—
10-23-3 Freeson, Liggett et al 1..... dry
Marion County—
24-18-3 Houser, Leeward Pet. 1 ..... dry
22-17-4 Hazineck, Frank et al 1..... 25
Lyon County—
25-21-10 Bradfield, Ritchey & Moore 2.. 25
30-21-10 Jones, Theta Oil 8 10
31-21-12 Jones, Schwartz et al 3..... dry
Rice County—
1-19-7w Deed, Pryor & Lockhart 1..... dry
25-20-6w Johanson, Midland Oil 1..... 20
2-21-6w Walstein, Independent O. & G. Co. 3 427
Walstein, The Prairie O. & G. Co. 2 100
Reno County—
24-24-8w Smith, Hartman & Skaer 1... 150
25-26-9w Dutton, T. B. Slick 1..... dry

Russell County—
12-11-13 Pospishal, Krueger et al 1.... dry
32-11-15 Dodge, Derby Oil et al 5..... 125
Saline County—
26-15-2w Sheldon, Brown & Woodward 1 dry
Woodson County—
21-23-14 Otto, Hillside Oil 3 25
29-23-14 Maclaskey, The Prairie O. & G. 12 35
13-26-14 Daniels, Skelly Oil 2 ..... dry
30-23-14 Collins, Little Seven Oil 5 15
Allen County—
30-26-19 Wine, W. W. Rood 1 15
Wine, W. W. Rood 2 15
Anderson County—
2-22-19 Gillispie, D. D. Nolan 11..... 20
33-22-19 Boon, A. Fuel O. & G. Co. 5 500
15-21-20 Ware, Pioneer Mutual Oil 10.. 25
5-21-21 Andrews, Doering & Childs 1 2
7-21-21 Thomas, Fleming & Bedford 1 dry
33-20-21 Kretchmer, Fleming & Bedford 26 17
Neosho County—
31-27-19 Buighart, Commonwealth Oil 19 1
4-28-19 Burrough, H. H. McCall 10 ... 1
Montgomery County—
2-32-15 Etter, McCandless et al 1 ... dry
18-31-17 Shanton, A. V. Jackson Trust Co. 8 50
Shanton, A. V. Jackson Trust Co. 9 25
24-33-13 Brooks, Steinberger 1 ..... dry
28-33-14 Neel, O. C. Boop 13 10

Wells completed 40
Production 1634
Dry 3
Gas 3
Gas production 8,500,00

BUTLER COUNTY
Rigs
8-24- 4 Harrison, Skelly, Phillips & Connell 1.
20-25- 7 Lambert, Burford & Brim 1.
32-26- 4 Scully, Elmwood Oil Co. & Douglas 1.
31-26- 6 Fisher, Payne et al 1.
17-26- 8 Dickinson, Tidal Oil Co. 3.
9-27- 6 McGinnis, Allison & Fitzwilliams 2, 3.
33-27- 6 Shrivers, Patton et al 2.
Stern, Patton et al 1.
34-27- 6 Shriver, Magnolia Pet. 1.
Shriver, Patton et al 1
13-27- 7 Parker, Phillips Pet. 2.
10-28- 4 Moyle, Empire G. & F. Co. 44.
36-27- 5 Colbert, Reynolds et al 1.
4-28- 6 Blakeman, Magnolia Pet. 5.
24-28- 6 King, Morgan et al 1.
13-28- 7 French, Davidson et al 1.
1-29- 3 Doran, Helmerick & Payne 1.
20-26- 3 Marmane, Barnsdall Oil Co. 1.
Wells Drilling
25-24- 7 Stone, Powell et al 1.
29-25- 8 Jahren, White Eagle O. & R. 1.
31-25- 8 Jahren, McPherson & Jones 1.
9-26- 3 Dickinson, Pryor & Lockhart 1.
20-26- 3 Hoerman, Empire G. & F. Co. 1.
Marmane, Phillips Pet. Co. 1.
24-26- 4 Harmon "A," James et al 4.
20-26- 5 Koepfer, Empire G. & F. Co. 74.
33-26- 8 Nicols, Phillips Pet. Co. 1.
20-26- 8 Drum Bitler, Rogers et al 14.
31-26- 8 Gray, White Eagle O. & R. Co. 1.
34-27- 5 Hutchinson, Empire G. & F. Co. 1.
3-27- 6 Lewis, Davis, Hazlett et al 1.
4-27- 6 Beedles, Johnson et al 1, 2.
Edwards, Phillips Pet. Co. 1.
Shaffer, Rosenthal, Lassen et al 3, 4.
8-27- 6 Beedles, Phillips Pet. Co. 1.
9-27- 6 McGinnis, Allison & Fitzwilliams 1.
Tatum, Phillips Pet. Co. 2.
12-27- 7 Worrell, Empire G. & F. Co. 5.
Worrell, Tidal Oil Co. 2.
17-28- 3 Staley, Findless et al 1.
11-28- 4 Hazlett, Empire G. & F. Co. 10.
11-28- 4 Wallace, Empire G. & F. Co. 18.
1-28- 5 Weaver, Dixie Oil Co. et al 1.
26-28- 5 Molter, National Ref. Co. 5.
3-28- 6 Kramer, Allison & Fitzwilliams 7.
Gilson, Mid-Kansas Oil. 1.
32-28- 7 Peak, Mid-Kansas Oil 1.
28-29- 3 Kramer, Shawver et al 1.
7-29- 4 Holcomb, Producers Pet. Co. 1.
5-29- 5 Plummer, Ramsey et al 2.
9-29- 5 Houser, Bronson et al 1.
Shut Down
18-25- 4 Joseph, Wichita Drlg. Co. 1.
24-26- 5 Mossman "A," Lebow & Travis 1.
30-26- 6 McClure, Foraker et al 1.
2-26- 7 Cannh, Basom et al 1.
15-29- 3 Davis, Douglas Oil et al 1.
25-29- 3 Schultz, B. G. M. Oil Co. 1.
21-29- 4 Holcomb, E. Wilcox et al 1.
12-29- 6 Keneyon, Tobin et al 1.
Rigs, 19; wells drilling, 43; total, 62.

CHAUTAUQUA AND ELK COUNTIES
Rigs
14-31-10 Chaffine, Pure Oil Co. 18.
Leffingwell, Union Gas Corp. 11.
18-31-10 McSpadden, Lowe & Watson 1.
23-31-10 Webb, Frazier, Fowler et al 3.
29-31-10 Rettig, Bedel Oil Co. 1.
Wells Drilling
13-29- 8 Porter, Allison & Fitzwilliams 1.
27-29- 8 Erickson, Roth & Co. 1.
8-29-11 Reid, Kismet Oil Co. 1.
12-30- 9 Donnall, Seeley et al 3.
14-30-10 Miller, Elmwood Oil Co. 1.
29-30-12 Dunlap, Harvey & Robinson 1.
1-31- 9 Brace, Roth, Farout et al 1.
14-31-10 Chaffine, Pure Oil Co. 17, 19, 20.
Leffingwell, Union Gas Corp. 10.
23-31-10 Webb, Frazier, Fowler et al 2.
29-31-11 Welch, Superior Oil Co. 1.
27-33-11 Schoelkoph, The Prairie O. & G. Co. 10.
Shut Down
11-32-10 Jeanerette, Griffeth-Strueb Oil Co. 1.
23-31-10 Welch "B," Union Gas Corp. 1.
Rigs, 5; wells drilling, 16; total, 21.

COWLEY COUNTY
Rigs
20-30-6 Manley, Allison & Fitzwilliams 1.
36-30- 6 Marshall, Herron et al 1.
4-31 5 Elliott, Tatlock & McCullough 1.
22-32- 4 Oliverson, Foster, Deal et al 1.
22-32- 4 Townlot, Pattee, Tyrell et al 1.
8-33 5 Bailey, Klosaie & Kitchell 1.
Wells Drilling
21-30- 3 Carlson, Roxana Pet. 1.
30-30- 4 Dickson, Trees Oil Co. 1.
24-30- 6 Ward, Payne & Helmick 1.
20-31- 4 Hughes, Brinn et al 1.
21-31- 4 Ross, Twin State Oil 2.
22-31- 4 King, McCullough et al 1.
6-31- 6 Eastman "C," Empire G. & F. Co. 2.
Eastman, The Texas Co. 14.
20-32- 3 Carson, T. B. Slick 1.
15-32- 4 School land, J. A. Hull 5.
State land, State Gas Co. 2.
Graham, Marland Oil 4.
Graham, McMahon et al 1.
State land, McNabb et al 1.
17-32- 4 Beinhorn, Leighty et al 1.
22-32- 4 Dibbons, T. B. Slick 2,4.
Townlot, Roth & Farout 1.
Brane, Sutter & Adams 1.
Wallace, McNabb et al 2.
Townlot, Wakefield et al 1.
33-32- 4 Mitisler, McNabb & Sidwell 1.
8-33- 3 Thurlow, Barnsdall Oil 1.
28-33- 3 State land, Babcock et al 1.
4-34- 3 Beeks, Gypsy Oil Co. 1.
19-34- 3 Bestle, Marland Oil Co. 1.
25-34- 6 Day, Lewis Oil Co. 1.
16-35- 4 Duddon, Pyle et al 1.
Shut Down
20-30- 3 Nave, Roxana Pet. Co. 1.
29-30- 3 Beard, Roxana Pet. Co. 1.
33-31- 4 Goodrich, Brinn et al 1.
15-32 4 Swenson, Independent O. & G. 1.
School land, Marland Oil Co. 2.
7-33- 7 Riding, Brown Bros. 1.
35-34- 3 De Bard, Derby Oil Co. 1.
3-35- 4 Eaton, Dickey et al 1.
Rigs, 5; wells drilling, 36; total, 42.

GREENWOOD COUNTY
Rigs
7-22-10 Pixlee, Ritchey & Moore 2.
19-22-10 Browning, Sinclair Oil 55, 56.
11-22-11 Kipfer, Empire G. & F. Co. 17.
14-22-11 Fromme, Empire G. & F. Co. 16.
Hood, Roxana Pet. Co. et al 2.
18-22-11 Clopton, Simmons et al 4.
34-23-11 Short, Connell Oil Co. 1.
24-23-12 Fletcher, Stark et al 1.
36-24-10 Mock, McGinnis et al 5.
Mock "A," McGinnis & Manhattan Oil Co. 2.
19-24-11 Freeman, Chistler et al 2.
34-24-11 Cummings, Hover et al 1.
5-24-12 Smith, Parrish et al 1.
36-24-12 Hoover, Cross et al 1.
17-24-13 Erickson, McCullough et al 1.
24-25- 8 Hoffman, Mid-Kansas Oil Co. 2.
35-25-10 Townlot, Polhamus et al 1.
15-25-11 Cox, Troxell et al 1.
31-25-11 Schell, Roth, Farout et al 1.
5-25-13 Gilroy, Mendenhall et al 1.
17-28- 9 Boyce, Theta Oil Co. 1.
Wells Drilling
7-22-10 Pixlee, Empire G. & F. Co. 1.
9-22-10 Pixlee, Theta Oil Co. 1.
17-22-10 Browning, Theta Oil Co. 18.
11-22-11 Hind, Empire G. & F. Co. 11.
23-22-11 Duby, Empire G. & F. Co. 12.
29-22-11 De Malorie "D," York State Oil Co. 1.
9-22-12 Swanson, Bement & Amerada Pet. 1.
Swanson, The Texas Co. 4.
26-23- 8 Ward, Phillips Pet. Co. 1.
15-23- 9 Teter, Scott et al 1.
16-23- 9 Teter, Empire G. & F. Co. 36.
4-23-10 Barnard, Abel & Rhodes 1.
6-23-10 Barnard, Basom et al 1.
12-23-10 Hale, Elmwood & Parker 1.
31-23-10 Martindale, Mid-Kansas Oil 34.
5-23-11 Seeley, Ritchey & Moore 8.
16-23-11 Edwards "B," The Texas Co. & Simmons 4, 3, 4.
21-23-11 Edwards, Empire G. & F. Co. 5, 6, 7, 8.
16-23-12 Cox, Patterson et al 1.
21-23-12 McMullen, Stark et al 1.
26-23-12 Bigler, Chambers, Spencer et al 1.
18-23-13 Fletcher, Patterson et al 1.
21-23-13 Jones, Superior Oil Co. 9.
4-24-10 Williams, Basom et al 1.
7-24-11 Gaffney, Henderson & Holdren 1.
5-24-13 Bayes, McCullough et al 1.
12-25- 8 Welch, Roth & Farout 4.
35-25- 8 Ladd, Harwood, Winters & Marland Oil Co. 1.
10-25-10 Hammons, McGinnis et al 1.
26-26- 8 McGinnis, Flack et al 1.
13-26- 9 Life, Beacon Oil Co. 2.
28-26- 9 Klein, Magnolia Pet. Co. 3.
7-27- 9 Riley, Empire G. & F. Co. 3.
Shut Down
11-23- 9 Nettle, Phillips Pet. Co. 1.
23-24-10 Edwards, Edwards et al 1.
6-24-13 Kolander, Sharpless et al 1.
12-25- 8 Birkett, Roth & Farout 11.
31-25-10 Keller, Ferrell et al 1.
25-26- 9 Saurwine, Kurtz et al 1.
22-27- 9 Lilly, Superior Oil Co. 1.
7-27-10 Weaver, Griffeth et al 1.
33-27-11 Benest, Winona O. & G. Co. 1.
1-28-12 Hayes, Swanson et al 1.
Rigs, 22; wells drilling, 48; total, 70.

LYON COUNTY
Wells Drilling
25-19-10 Bibermyer, Culp et al 1.
32-20-13 Scott, Gasche & Balliere 1.
2-21-10 Rossillion, Marland Oil Co. 1.
25-21-10 Bradfield, Jackson & Wise 2.
Bradfield, McCullough et al 1.
26-21-10 Lamotoux, Kellogg Drig. Co. 1.
30-21-10 Jones, Theta Oil Co. 9.
Atyeo, Transcontingetal Oil Co. 12.
22-21-12 Holmerickhouse, Tulsa Oil Co. 1.
Shut Down
24-21-10 Rossillion, Super Six Oil Co. 4.
30-21-12 Hooper, Leonard Pet. Co. 1.
Wells drilling, 11; total, 11.

MARION COUNTY
Rigs
31-17- 4 Ucker, Givens et al 1.
2-18- 4 Harte, Cress, Frank et al 1.
15-21- 3 Beck, Allison & Fitzwilliams 1.
31-21- 4 Townsend, Crow et al 1.
2-22- 3 Berns, Cameron et al 1.
Wells Drilling
22-17- 4 Hazineck, Phillips Pet. 1.
33-17- 4 Houser, Frank et al 1.
8-18- 4 Novac, Schook et al 1.
8-19- 4 Propp, Youker, Propp et al 2.
13-20- 4 Lehl, Empire G. & F. 1.
19-20- 4 Harrison, Tulsa Oil Co. et al 1.
13-21- 4 Berry, Sheedy et al 1.
Shut Down
8-17- 3 Damon, Ark. Fuel Oil 1.
28-13- 3 Vinguska, Skow Bros. et al 1.
20-18- 4 Meicher, Skow Bros. & Ritchie 1.
28-20- 4 Stafford, Hartman & Skaer 1.
Rigs, 5; wells drilling, 11; total, 16.

RICE COUNTY
Rigs
35-20- 6w Welch, Phillips Pet. Co. 1.
Wells Drilling
35-20- 6w Welch, Skelly Oil Co. 2.
2-21- 6w Jacobson, Sand Creek Oil Co. 2, 3.
Walstein, The Prairie O. & G. Co. 3.
Walstein, Independent O. & G. Co. 4, 5.
3-21- 6w Miller, Independent O. & G. Co. 2.
Miller, Phillips Pet Co. 1.
34-21- 7w Trotter, Miss. Valley Oil Co. 1.
13-21- 8w Syminsen, Mid-Kansas Oil Co. 1.
35-20- 6w Welch, The Prairie O. & G. Co. 4.
Shut Down
2-19-10w Hollscher, Sparta Drlg. Co. 1.
Rigs, 1; wells drilling, 12; total, 13.

SUMNER COUNTY
Rigs
25-31- 2e Reitz, Derby Oil Co. 2.
Riverbed, Roxana Pet. 4, 7.
Churchill, Roxano Pet. Co. 7.
36-31-2e Taton, Roxana Pet. Co. 1.
4-34- 3w Werneke, Jarvis et al 1.
9-35-1e Volker, Otstot et al 1.
Wells Drilling
4-30- 1w Wheeler, Champlin O. & R. Co. 1
9-30- 2w Latta, Champlin O. & R. Co. 1.
19-30- 4w Kelly, Champlin O. & R. Co. 1.
3-31- 2e Griffeth, Gypsy Oil Co. 1.
24-31- 2e Shore, Vickers & Johnson 2, 3.
Shore, Roxana Pet Co. 2, 3.
25-31- 2e Shore, Roxana Pet. Co. 2.
Mason, Roxana Pet. Co. 4.
Rutter, Roxana Pet. Co. 4.
Churchill, Roxana Pet. Co. 5.
Van Sickle, Roxana Pet. Co. 4.
Shore "B," Roxana Pet. Co. 2, 3.
36-31- 2e Riverbed, Roxana Pet. Co. 2, 6.
8-31- 3e Orr, Carter Oil Co. 2.
14-32- 2e Buffington, Amerada Pet Co. 1.
17-32-2e Norris, I. T. I. Oil Co. 2.
34-32- 2e Nofsinger, Shawver et al 1.
22-33- 3w Bartlow, Otstot et al 1.
15-34- 1e Fulcher, Homa-Wood Oil Co. 1.
9-34- 2e White, Roxana Pet Co. 1.
11-34- 4w Wycoff, Jarvis et al 1.
11-35- 1e Hall, Marland Oil Co. 1.
18-35- 1e Hamilton, Amerada Pet. Co. 1.
16-35- 2e White, Washohoma Oil Co. 1.
Shut Down
23-34- 2w Douglas, Gypsy Oil Co. 1.
Rigs, 7; wells drilling, 29; total, 36.

WOODSON COUNTY
Rigs
23-26-14 Lauber, Peerless O. & R. Co. 4.
Wells Drilling
31-23-14 Dewey, Superior Oil Co. 15.
2-24-13 Dye, Sullivan et al 1.
Shut Down
17-25-14 Weide, Fields & Cross 1.
13-26-14 Daniels, Skelly Oil Co. 1.
23-26-14 Lauber, McCullough et al 1.
Duncan, Peerless O. & R. Co. 1.
Lauber, Peerless O. & R. Co. 3.
26-26-14 Gregory, McMullen et al 1.
27-26-14 Henley, Peerless O. & R. Co. 1.
Rigs, 1; wells drilling, 9; total, 10.

MISCELLANEOUS COUNTIES
Rigs
Morris County—
32-14- 7 Barber, Klein et al 1.
Pottawatomie County—
17- 9-12 Stewart, Crawford et al 1.
31- 9-12 Bratchbar, Crawford et al 1.
Reno County—
6-22- 4w Williams, Danciger et al 1.
19-22- 7w Griffen, Miss. Valley Oil Co. 1.
28-23-7w Dunn, Hartman & Skaer 1.
1-25- 8w Crabbs, Streeter & Stearns 1.
Sedgwick County—
9-25- 2e Harrison, Smith & Keller 1.
5-28-1w Schultz, Marland Oil 1.
Smith County—
18- 5-15w Smith, Gardener et al 1.
Wells Drilling and Shut Down
(Shut down wells indicated by *)
Barber County—
35-32-14 Ott, Vickers & Miller 1.
Barton County—
9-16-15 Craft, Johnson et al 1.
25-17-15 Boyle, Phillips Pet. Co. 1.
28-18-12 Sooy, Rankin et al 1*.
31-18-12 Taul, Hagnes et al 1.
17-19-11 Smith, Huffine et al 1.
12-20-13 Ward, Everette & Wiley 1*.
Chase County—
4-17- 7 Anderson, Empire G. & F. Co. 1.
25-21- 9 Stotler, Barnsdall Oil Co. 1*.
36-21- 9 Atyeo, Sheedy et al 2.
Clark County—
21-32-31 Stephens, Watchorn O. & G. Co. 1.
Cloud County—
6- 6-4w Murdock, Concordia O. & P. 1*.
Coffey County—
10-21-15 Bodley, Kinney Ref. Co. et al 1*.
19-22-16 Decker, Ritchey & Moore 1*.
11-23-13 Young, Sheedy et al 1.
16-23-14 Peck, Harper 1.
14-23-16 Jones, Fidelity Oil Co. 1*.
Dickinson County—
23-13-3e Jones, Leeward Pet. Co. 1.
7-16- 1e Eliason, Dewey et al 1*.
Ellis County—
27-13-16 Reidell, Mid-West Refg. Co. 19.
13-13-18 Gerstner, Keys Promotion Co. 1.
Franklin County—
17-16-18 Owens, Smith, Thrice & Fisher 1*.
Geary County—
18 11- 5 Kurtz, Kirby & Wright 1.
Harper County—
19-32- 5 Burk, Berry Pet. Co. 1.
22-34- 6 Caton, Bu-Vi-Bar Pet Co. 1.
Harvey County—
3-23- 1e Sowder, Kansas Central Oil Co. 1.
Herman County—
19-21-22 Frizzell, Spencer & Marconnette 1*.
Jefferson County—
13- 9-19 Edwards, Northern Counties Oil 1*.
Kingman County—
20-27- 7 Woolsey, Pyle et al 1.
Labette County—
26-32-17 Wilks, Ark. Fuel Oil Co. 1*.
1-32-20 Thurman, Noble O. & G. Co. 1*.
33-32-20 Barnes, W. C. Willy 1*.
1-33- 7 Hornbeck, Cowell et al 1*.
5-35-20 Lipps, Wantland et al 1*.
McPherson County—
22-18- 2w Okerland, Otstot et al 1.
29-18- 2w Anderson, Merriman et al 2.
22-18- 3w Hansen, McCaughlin et al 1*.
12-19- 3w Kuns, Johnson et al 1.
30-21- 5w Ross, Laughlin et al 1*.
Montgomery County—
21-31-14 Faler, Ramler et al 1*.
21-32-13 Neiman, Dunn et al 1*.
36-32-14 Dryhead, Irish et al 1*.
5-32-16 Blakeman, Cowell et al 1*.
35-32-16 Wyberger, Bloom et al 1*.
29-32-17 Hellum, Earl & Overlease 1*.
35-33-16 Felt, Voice & Tabor 1*.
4-33-17 Hall, Townsend et al 1*.
30-33-17 Bunk, Brown & Wolf 1*.
28-34-14 Owens, Phillips Pet. Co. 1*.
12-35-16 Wilson, Tex-O-Kan Oil Co. 1*.
4-35-17 Walker, Gallowye & Roberts 1*.
Morris County—
14-16- 7 Hammer, Nicolls et al 1.
24-17- 9 Cessman, Rock Creek Oil Co. 1*.
Nemaha County—
19- 3-11 Myers, Nemaha O. & G. Co. 1.
Osage County—
3-15-15 Lease, Barber et al 1*.
27-15-16 Baley, West et al 1*.
8-17-17 Neil, Mull-Vit Dev. Co. 1*.
29-18-16 Blank, Young et al 1.
Pawnee County—
32-21-16 Lovette, Troup et al 1*.
Pottawatomie County—
11-10-12 St. Mary, Crawford et al 1*.
Rawlins County—
5- 3-34 Gorden, Byson Oil Co. 1.
Reno County—
10-23- 4w Magnuson, Sheldon et al 1*.
34-25- 9w Baley, Connell Oil Co. 1.
4-26-4w Griffeth, Marland Oil Co. 1.
Riley County—
20-10- 7 Thierer, Youker et al 1*.
Rooks County—
11- 9-16w Lukman, Livingston et al 1.
Russell County—
17-12-15w Munsell, Wilcox O. & G. Co. 2.
19-12-15w Ginther, Wilcox O. & G. Co. 1.
30-12-15w Ginther, Mid-West Ref. Co. 33.
6-14-12w Kistler, Kettle & Shoemaker 1.
5-14-15w Mermis, Midwest Ref. Co. 31.
8-14-15w Dortland, Keys Pet. Co. 1.
22-15-11w Lilak, Streeter & Stearns 1.
Saline County—
29-14-2w Davis, Johnson et al 1*.
15-15- 4w Holquest, Thrall et al 1*.
Sedgwick County—
6-25- 1e Poff, Boyle et al 1.
34-26-1e Jaden, Wichita O. & G. Co. 1*.
29-29- 2e Hansaber, Johnson et al 2.
Seward County—
33-32-34 Hitch, Vickers Pet. Co. 1.
14-33-33 Son, Wilson et al 1*.
Stafford County—
24-22-11 Richardson, Randell et al 1*.
Stephens County—
31-33-37 Jones, Independent O. & G. Co. 1.
Wabaunsee County—
15-13-12 Henderson, Williams et al 1*.
Wilson County—
3-27-14 Daniels, Allison & Fitzwilliams 1.
22-28-13 Thompson, Price et al 1*.
29-30-17 Smally, West & Williams 1*.
Rigs, 10; wells drilling, 86; total, 96.

LOUISIANA-ARKANSAS

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Union	33	902	12	6	14	39	53
Ouachita	30	307	9	0	2	13	15
Columbia	1	0	1	0	2	1	3
Nevada	3	100	0	0	0	5	5
Miscellaneous	2	0	2	0	2	4	6
Total Mar.	47	1,309	15	6	20	62	82
Total Feb.	29	756	7	7	18	64	82
Difference	18	553	8	1	2	2	0

LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bienville	0	0	0	0	1	0	1
Bossier	5	0	2	3	3	14	17
Caddo	27	2,094	11	2	15	36	51
Caldwell	1	0	1	0	1	1	2
Catahoula	0	0	0	0	1	1	2
Claiborne	2	0	2	0	0	2	2
DeSoto	6	60	1	0	2	4	6
Grant	11	450	9	0	2	3	5
La Salle	5	145	3	0	2	0	2
Monroe dist.	6	*	1	5	5	7	12
Natchitoches	3	0	3	0	4	2	6
Red River	2	50	1	0	1	5	6
Richland	1	0	0	1	4	11	15
Sabine	1	0	1	0	3	8	11
Webster	3	80	1	1	2	5	7
Winn	3	0	3	0	3	4	7
Total Mar.	72	2,879	39	12	49	103	152
Total Feb.	57	1,654	23	13	33	92	125
Difference	15	1,225	16	1	16	11	27

*55,500,000 feet of gas.

ARKANSAS
COLUMBIA COUNTY
14-28-22 Barge, Arkansas Fuel Oil Corp. 1 ..... dry
GRANT COUNTY
34- 4-13 Youngblood, Shaffer Oil Co. 1.. dry
LAFAYETTE COUNTY
15-16-23 Thomas, T. R. Brown 1 ..... dry
NEVADA COUNTY
9-14-21 McKinney, Advance Oil Co. 1 .. 10
9-14-21 Atkins, Dixie Oil Co. 1 40
10-14-21 Womack, Dixie Oil Co. 3 50

Wells completed 3
Production 100
Dry 0

OUACHITA COUNTY
36-15-17 Shirey, H. E. Clark 3 7
33-15-15 Umstead, Gulf Refining Co. A-25 110
32-15-15 Goodwin, Gulf Refining Co. 13 . 100
15-16-19 Goodwin, Magnolia Pet. Co. 1 .. 12
36-15-17 Smith, Magnolia Pet. Co. 3 15
36-15-17 H. Smith, Magnolia Pet. Co. 3 . 8
28-15-15 Murphy, Simms Oil Co. 7 40
22-15-19 Pelican, Wesson et al 1 7

Wells completed 8
Production 307
Dry 0

UNION COUNTY
9-18-17 Primm, Caigo Oil Co. 1 ..... dry
8-16-16 Fee, C. J. Childs A-1 15
34-17-15 Telford, Crestline Oil Co. 1 .. dry
15-16-15 Murphy, Eason et al A-9 20
16-16-15 Cook, Gladys Belle Oil Co. 11 . 25
8-18-14 Williams, Grimes & Jones 1 30
23-17-16 Ennis, Hatfield et al 3 ..... dry
10-16-15 Giller, Hollyfield et al 17 35
10-16-15 Giller, Hollyfied et al 8 22
9-16-15 Murphy, Imperial Oil & Gas Co. 4 75
9-16-15 Murphy, Imperial Oil & Gas Co. 6 60
9-16-15 Murphy, Keen & Woolf 4 ..... gas
3-16-15 Graves, Lion Oil & Refg. Co. 9 ..... dry
8-16-16 Childs, Magnolia Pet. Co. 1 .. dry
8-16-16 Childs, Magnolia Pet. Co. 5 . dry
8-16 16 Childs, Magnolia Pet. Co. 6 .. dry
7-16-15 Hatfield, Magnolia Pet. Co. 10. gas
11-18-13 Winn, Marine Oil Co. 1 ..... gas
10-18-18 Thompson, Marine Oil Co. 1 .. dry
10-18-15 Thompson, Marine Oil Co. B-1 gas
9-16-15 Murphy, O. G. Murphy 3 .... gas
9-16-15 Murphy, O. G. Murphy 9.... gas

9-16-15 Lilyew, Natural G. & F. Corp. 5 220
9-16-15 Murphy Oil Co. 7 52
9-16-15 Palmer, Peer Oil Corp. B-7 ... 100
10-16-15 Lawton, Richardson 4 12
10-16-15 Flenniken, Roxana Pet. Corp. A-1 ..... dry
4-16-16 Fee, C. L. Saxon 3 10
9-16-15 Murphy, Stewart et al 7 206
5-18-13 Cordell, Superior Oil Corp. 1.. dry
22-18-13 Peck, Tharpe et al 1 ..... dry
4-16-16 Saxon, The Texas Company 5. 20
3-19-13 Morrison, Wingfield et al 1 .. dry

Wells completed 33
Production 902
Dry 12
Gas 6
Gas production 138,000,000

Shut Down

ASHLEY COUNTY

20-15- 7 Bledsoe, Rhodes & Kicker 1.
Rigs, 0; well drilling, 0.

BRADLEY COUNTY

Wells Drilling

33-15-11 Arkansas Timber Co., Magnolia Pet. Co. 1.
12-12-12 Southern Timber Co., Johnson & Adams 1.

Shut Down

25-16-12 Arkansas Timber Co., Arkansas Fuel Oil Corp. 1.
Rigs, 0; wells drilling, 2; total, 2.

CLARK COUNTY

Well Drilling

35-16-20 Burrow, Whelen Oil Co. 1.

CLEVELAND COUNTY

Shut Down

31-10-10 Hall, Kingland Oil Co. 1.
Rigs, 0; well drilling, 0.

COLUMBIA COUNTY

Rigs

23-18-19 Duffer, Colquitt & Thomas 1.
15-17-22 Gantt, F. R. Maier et al 1.

Well Drilling

14-19-23 Whitehead, Columbia Oil Syndicate 1.

Shut Down

29-19-22 Franks, Mitchell et al 1.
3-15-21 Runyon, Mitchell et al 1.
6-18-20 Davis, Scott Phillips 2.
35-19-19 Duffer, Smith & Compton 1.
4-20-21 Brodcaw, Wingfield & Mitchell 1.
Rigs, 2; well drilling, 1; total, 3.

DREW COUNTY

Shut Down

35-13- 5 Olga, McClintock & Goodka 1.

GRANT COUNTY

Rig

5- 4-11 Meek, Jones & Watkins 1.

HEMSTEAD COUNTY

Shut Down

23-10-25 Garland, Burton et al 1.
Rigs, 0; wells drilling, 0.

LAFAYETTE COUNTY

Rig

11-19-25 Duty, Arkansas Fuel Oil Corp. 1.

Shut Down

3-20-24 Red River, Kensaw Petroleum Co. 3.
Rigs, 1; wells drilling, 0.

LINCOLN COUNTY

Shut Down

33-10- 6 Carter, Pine Prairie Oil & Gas Co. 1.
Rigs, 0; wells drilling, 0.

LITTLE RIVER COUNTY

Shut Down

4-13-31 Waldrop, Greason et al 1.
2-13-31 Allen, Grote et al 1.
10-11-31 Hawkins, Mellick Oil Co. 1.
Rigs, 0; wells drilling, 0.

MILLER COUNTY

Well Drilling

28-15-26 Dale, Lenz et al 1.

Shut Down

26-14-27 Priest, W. D. Nash et al 1.
Rigs, 0; well drilling, 1; total, 1.

NEVADA COUNTY

Wells Drilling

9-11-21 Atkins, Advance Oil Co. 1.
9-14-21 McKinney, Autrey Oil Co. 2.
11-14-21 Wallace, Holmes et al 1.
9-15-22 Bodcaw, Humble Oil & Ref. Co 4.
6-14-20 Haynie, Martin et al 1.

Shut Down

12-13-22 Cross, Fruen et al 1.
22-12-21 Rhodes, Fruen et al 1.
Rigs, 0; wells drilling, 5; total, 5.

OUACHITA COUNTY

Rigs

13-15-17 Berg, Copenhaven et al 3.
4-16-15 Umstead, Exchange Oil Co. 3.

Wells Drilling

21-14-17 Reynolds, A. T. Grayson 1.
33-15-15 Bennett, Gulf Ref. Co. 10.
33-15-15 Umstead, Gulf Ref. Co. A-25.
8-16-15 McClanahan, Imperial Oil & Gas Co. 9.
27-15-16 Hicks, Keever et al 1.
27-15-16 Hicks, W. P. Keever 2.
36-15-17 Smith, Magnolia Pet. Co. 4.
3-16-15 Umstead, Marine Oil Co. 11.
36-15-17 Shirey, Middlesex Oil Co. 4.
33-15-15 Berry, Sunny Vim Oil Co. 12.
31-15-15 Laney, Texas Pacific Coal & Oil Co. 9.
33-15-15 Umstead, Unity Pet. Co. 8-A.
22-15-19 Culp, Wesson et al 1.

Shut Down

19-12-17 Pouder, H. M. Harrell, Jr. 1.
3-14-18 Chandler Estate, J. G. Reynolds 1.
28-15-16 Shoolhouse, A. M. Sutton 2.
2-16-15 Murphy, Unity Pet. Co. 1.
15-15-19 Gosden, Magnolia Pet. Co. 2.
Rigs, 2; wells drilling, 13; total, 15.

UNION COUNTY

Rigs

1-16-17 LaGrone, Arkansas Fuel Oil Co. 8.
10-16-15 Lawton, E. M. Jones 2-A.
8-16-15 Lilyew, Lion Oil & Ref. Co. C-7 (location).
8-16-16 Crawford, Magnolia Pet. Co. 2.
8-16-16 Crawford, Magnolia Pet. Co. 3.
7-16-16 Freeman, Magnolia Pet. Co. 3.
8-16-16 Laney, Magnolia Pet. Co. 4-B.
8-16-16 Laney, Magnolia Pet. Co. 3-B.
8-16-15 Murphy, Magnolia Pet. Co. 3.
17-16-15 Wilson, Magnolia Pet. Co. 7.
15-17-16 Milner, J. L. Meek 2
15-17-16 Harrell, Rovenger Oil Corp. 4.
3-16-15 Roper, Unity Pet. Co. 15.
15-19-13 Greer, Wingfield et al 1.

Wells Drilling

7-18-13 Union Saw Mill Co., Garrett Modisette Drilling Co. 1.
1-16-17 Hodges, W. H. Gilliland B-1.
9-16-15 Murphy, Gulf Ref. Co. 23.
9-16-15 Murphy, Hollifield et al 2.
9-16-15 Flenniken, Humble Oil & Ref. Co. B-2.
20-17-16 Goodwin, Humble Oil & Ref. Co. 6.
9-16-15 Murphy, Imperial Oil & Gas Co. 5.
9-16-15 Murphy, Imperial Oil & Gas Co. 7.
17-16-15 Murphy, E. M. Jones 4.
9-16-15 Murphy, Louisiana Oil Ref. Corp. B-3.
10-16-15 Flenniken, Lion Oil & Ref. Co. A-9.
3-16-15 Graves, Lion Oil & Ref. Co. 6.
9-16-15 Hardy-Murphy, Lion Oil & Ref. Co. 2.
9-16-15 Hardy-Murphy, Lion Oil & Ref. Co. 6.
8-16-15 Murphy, Lion Oil & Ref. Co. D-7.
8-16-15 Murphy, Magnolia Pet. Co. 9.
5-16-16 Saxon, Magnolia Pet. Co. 4.
17-16-15 Wilson, Magnolia Pet. Co. 6.
10-18-13 Thompson, Marine Oil Co. A-2.
10-18-13 Winn Estate, Marine Oil Co. B-1.
8-18-15 Pratt, Mounts et al 6.
17-16-15 Vestel, Murdock et al 1.
9-16-15 Murphy, O. G. Murphy 6.
8-16-16 Fagg, National Consolidated Pet. Co. 2.
9-16-15 Bilyew, National Gas & Fuel Corp 4.
8-16-15 Flenniken, National Gas & Fuel Corp. 4.
9-16-15 Murphy, National Gas & Fuel Corp. E-1.
9-16-15 Murphy, Ohio Oil Co. 4.
15-18-13 Simmons, J. W. Olvey 1.
9-16-15 Palmer, Peer Oil Co. B-1.
10-16-15 Lawton, A. H. Ramage C-11.
14-16-16 Murphy, Sam Richardson M-2.
4-17-14 McCain, Rovenger Oil Corp. 1.
9-18-13 Ballard, Simms Oil Co. 1.
9-16-15 Murphy, Stewart et al 8.
3-16-15 Hays, Sun Oil Co. 20.
9-16-15 Flenniken, Sunny Jim Oil Co. 4.
5-18-13 Cordell, Superior Oil Corp. 2.

Shut Down

8-19-13 Howard, C. H. Allison et al 1.
8-18-12 Garner, Bonderant et al 1.
5-18-16 Saxon, Crescent Pet. Co. 1.
21-18-12 Dykes, H. L. Hunt 1.
26-17-16 Goodwin, Imperial Oil & Gas Co. 1.
1-17-14 Crain, Ohio Oil Co. 1.
Rigs, 14; wells drilling, 39; total, 53.

NORTH LOUISIANA WELLS COMPLETED

BOSSIER PARISH

9-20-13 Bulkley, Anderson and West 1 dry
27-23-12 Mays, Bahan and associates 1 gas
23-18-11 Jones, E. A. Bloomquist 2 ..... dry
8-23-11 Ballinger, Oil Fields Gas 4 .... gas
24-16-12 Caplis, The Texas Company 5 gas

Wells completed 5
Production 0
Dry 2
Gas 3
Gas production 48,500,000

CADDO PARISH

11-16-14 McMillan, J. H. Brogden et al 1 dry
8-20-16 U. S. Govt., Camp Oil Co., Inc. 1 5
14-21-15 Robertshaw, Dixie Oil 83..... 10
13-21-15 Robertshaw, Dixie Oil 84..... dry
14-21-15 Robertshaw, Dixie Oil 85..... 40
23-20-16 Ferry Lake, Gulf Ref. 264..... 17
23-20-16 Ferry Lake, Gulf Ref. 265..... 18
14-20-15 Wemple, Gulf Ref. 3..... dry
28-20-16 Ferry Lake, Gulf Ref. 262..... 18
24-22-15 Caddo, Lewis Oil Corp. 8..... dry
23-22-15 Caddo, Luby Oil 14..... 10
22-21-15 Herndon, Magnolia Pet. 13... 2
6-20-15 Doan-Thigpen, Magnolia Pet. 16 9
24-21-15 Dillon, Magnolia Pet. 19..... 1800
6-17-16 Bell, Magnolia Pet. 1..... gas
22-21-15 Solley, J. M. Miller 6..... 5
24-22-15 Fields, H. H. Morris 1..... dry
24-22-15 Fields, H. H. Morris 2..... dry
4-17-16 Wilburn, Owl Oil 2..... gas
14-20-15 Glassell, The Texas Company 2 dry
4-21-16 Harrell, The Texas Company 58 50
15-15-12 Hutchinson, The Texas Company 3 ..... dry
32-21-15 Edson, Tholl Oil Co. 1..... 10
31-21-15 Muslow, Tholl Oil Co. 2..... 100
15-20-15 Thomas, Victor Wenzell 4..... dry
15-20-15 Thomas, Victor Wenzell 3..... dry
19-17-16 Stringfellow, West La. Gas 2. dry

Wells completed 27
Production 2094
Dry 11
Gas 2
Gas production 15,000,000

CALDWELL PARISH

22-14-2e Shaw, E. V. Wenzell 1..... dry

CLAIBORNE PARISH

28-19- 5 Beard, Brown et al 1..... dry
22-21- 7 Mitchell, Standard Oil 1..... dry

Wells completed 2
Production 0
Dry 2
Gas 0

DE SOTO PARISH

28-12-11 Mason, Magnolia Pet. 1..... 60
7-11-11 Lanier, Snapp et al 1..... dry

Wells completed 2
Production 60
Dry 1

GRANT PARISH

13- 7-1e Ball, E. H. Billeaud 1..... dry
17- 9-1e Swope, Gulf Ref. 2-A..... 150
8- 9-1e Swope, Gulf Ref. 2-A..... dry
17- 9-1e Holmes, Holmes et al 1-A..... dry
17- 9-1e Holmes, Holmes et al 2..... dry
17- 9-1e Holmes, Holmes et al 3..... dry
20- 9-2w L. & A., Humble O. & R. 11-A dry
17- 9-1e Holmes, Paulette et al 1..... 300
8- 9-1e Croom, J. J. Roberts 1..... dry
16- 9-1e Swope, The Texas Company 2 dry
20- 9-1e Holmes, Word Phelps 1..... dry

Wells completed 11
Production 450
Dry 9
Gas 0

LA SALLE PARISH

6-10-2e Dawson, Hog Creek Oil 1.... dry
35-10-1e Morrow, Honeycutt et al 1.... dry
30-10-2e Tremont, Louisiana Oil Ref. Corp. 2-B 45
3- 9-1e Tremont, Louisiana Oil Ref. Corp. 5-C ..... dry
7-10-2e Urania, Youngblood et al 1... 100

Wells completed 5
Production 145
Dry 3
Gas 0

MONROE DISTRICT

13-18-4e Montgomery, Jordan Drlg. Co. 1 ..... gas
10-19-5e Fee, Laddell Properties, Inc. 37 ..... gas
7-20-4e Trimble, Natl. Gas Prod. Co. 1 gas
26-20-4e Burton, Natl. Gas Prod. Co. 1 gas
2-19-4e Ladell, Southern Carbon Co. 5 gas
27-20-6e Interstate, Standard Oil Co. 4 dry

Wells completed 6
Production 0
Dry 1
Gas 5
Gas production 55,500,000

NATCHITOCHES PARISH

22-13-6w L. & A., Ohio Oil 1..... dry
4-11-6w Edenborn, J. F. Palmer..... dry
25- 7-7w Frost, Weaver Bros. 1 ..... dry

Wells completed 3
Production 0
Dry 3

RED RIVER PARISH

23-13-10 Posey, S. M. Cagle 1..... dry
30-13-10 Brinkerhoff, The Texas Company 35-B 50

Wells completed 2
Production 50
Dry 1
Gas 0

RICHLAND PARISH

32-17-6e Colvin, Palmer Corp. 1..... gas

Wells completed 1
Gas production 19,136,000

SABINE PARISH

36- 5-13 Glague, Godchaux et al 1..... dry

WEBSTER PARISH

23-21-10 Davis, Humble O. & R. 5-B... gas
30-19-10 Bruner, I. J. Laborde 1..... dry
21-21-10 Robins, Magnolia Pet. 4-A..... 80

Wells completed 3
Production 80
Dry 1
Gas 1
Gas production 3,000,000

WINN PARISH

9-11-4w Bodcaw, Greer & Gault 1 .. dry
31-10-2w L. & A., Humble O. & R. 19-A dry
27-10-1e Albritton, Liggett et al 1.... dry

Wells completed 3
Production 0
Dry 3

WELLS DRILLING

BIENVILLE PARISH

Rigs

9-15- 7 L. & A., B. P. Borden 1.

Shut Down

27-15- 8 Cargle, Kimbrough et al 1.

BOSSIER PARISH

Rigs

14-21-14 Gibson-Tiger, John Glassell, Jr., et al 1.
15-19-11 Bliss & Wetherbee, Humble O. & R. 30.
23-17-12 Jeter, Sligo Synd. 1.

Wells Drilling

16-23-12 Dodson, Bethany O. & G. 1.
32-23-13 Ford, Clark & Norton 1.
10-22-11 Thomas, Doerr et al 1.
24-16-12 Hodges, Gulf Ref. 6.
2-18-12 Atkinson, Harrell Drlg. 1.
23-23-12 Blanton, La. Oil Ref. Corp. 1.
15-23-12 Dodson, Magnolia Pet. 1.
9-16-11 Bossler, Palmer Corp. 3.
7-18-11 Sandidge, Simms Oil 2.
24-17-12 Webb, Sligo Synd. 1.
24-16-12 Caplis, The Texas Company 14.
15-20-14 Levy, W. D. Perritt 12.
26-20-13 Jacobs, Tubbs et al 1.
14-23-12 L. & A., Woodley & Collins 2.
Rigs, 3; wells drilling, 14; total, 17.

CADDO PARISH

Rigs

4-17-16 Wilburn, Bahan & Bahan 1.
4-17-16 Wilburn, Bahan & Bahan 2.
14-21-15 Robertshaw, Dixie Oil 86.
15-21-15 Spell, Double I Oil 10.
27-20-15 Schmidt, Falcon Drlg. Co. 1.
26-18-16 Thigpen & Herold, A. C. Glassell 1.
14-21-15 Tyson et al, Gulf Ref. 13.
21-21-15 Dillon, Magnolia Pet. 18.
23-21-15 Dillon, Magnolia Pet. 20.
5-22-16 Maddie Fortner, Ohio Oil 1.
5-17-16 Bell, Owl Oil 1.
4-17-16 Wilburn, Owl Oil 3 (location).
28-21-15 State, Shreveport Oil 1.
23-22-15 Allen, Standish O. & R. 11.
22-21-15 Herndon, The Texas Company 6.

Wells Drilling

12-21-16 Murff, L. A. Berston 6.
1-20-16 Offenhauser, Bethany O. & G. 1.
23-23-16 Rodessa, Big Lake Oil 1.
18-21-15 Banker, J. E. Burton 15.
13-21-15 Noel, Dixie Oil 2-A.
13-21-15 Robertshaw, Dixie Oil 81.
27-21-15 Slattery, Dixie Oil 10.
5-20-16 Rives, W. W. Dobson et al 4.
15-21-15 Spell, Double I Oil 9.
31-21-16 Levee, Empire G. & F. 1-B.
15-21-16 Smith, Galloway et al.
17-21-14 Taylor, Gilliam Synd. 1.
28-20-16 Ferry Lake, Gulf Ref. 266.
28-20-16 Ferry Lake, Gulf Ref. 267.
8-19-16 Hampton, H. M. Hancock 1.
2-17-14 Fee, La. Refrigerator Prod. Co. 1.
24-22-15 C. M. L. Co., Lewis Oil Corp. 9.
8-20-15 Caddo, Magnolia Pet. 2.
24-21-15 Dillon, Magnolia Pet. 16.
6-20-15 Doan-Thigpen, Magnolia Pet. 17.
7-21-14 Planters, Magnolia Pet. 4.
23-21-15 Robertshaw, Magnolia Pet. 20.
10-20-15 Glassell, M. I. Morgan 8.
28-21-15 Murray, Ohio Oil 3.
34-18-16 Trosper, Standard Oil 1.
33-21-16 Stiles, Standard Oil 177.
32-21-16 Stiles, Standard Oil 178.
23-21-15 C. M. L. Co., The Texas Company 47.
14-20-16 Curtis, The Texas Company 6.
10-20-16 Hardy, The Texas Company 1.
14-21-15 Herndon, The Texas Company 5.
4-21-16 Harrell, The Texas Company 56.
21-21-15 Hicks & Payne, The Texas Company 5.
31-21-15 Muslow, Thomason 7.
15-20-15 Hunsicker, Victor Wenzell 4.
32-21-15 Muslow, Woodley Pet. 3.

Shut Down

2-20-16 Dambley, Burford et al 1.
35-23-16 Payne, J. B. Files 1.
17-21-14 Sellington, Gilliam Synd.
8-19-16 La. L. & P. Co., Haynes Bros. 1.
12-20-15 Youree, Murphy et al 1.
27-21-15 State, Shreveport Oil Corp. 2.
Rigs, 15; wells drilling, 36; total, 51.

CALDWELL PARISH

Rigs

5-13-5e Caldwell La. & T. Co., Southern Crude Oil Pur. Co. 8.

Wells Drilling

12-11-2e La. Central, Humble O. & R. 4-A.
Rigs, 1; wells drilling, 1; total, 2.

CATAHOULA PARISH

Rigs

21- 9-7e Tensas Delta, S. D. Hunter 2.

Wells Drilling

26- 9-6e Bessley, Lochnager O. & P. 1.
Rigs, 1; wells drilling, 1; total, 2.

CLAIBORNE PARISH

Wells Drilling

13-22- 7 McElwee, El Dorado Chief Oil 1.
16-22- 8 Lee, Magnolia Pet. 1.

Shut Down

22-19- 7 Wilburn, Mitchell P. Jansen 1.
Rigs, 0; wells drilling, 2; total, 2.

DE SOTO PARISH

Rigs

17-10-12 Logan, Magnolia Pet. 1.
11-10-13 Sebastian, Wm. Sebastian Synd. 1.

Wells Drilling

27-14-13 Riggs, Craise & Hintz 1.
9-12-11 Jenkins, Dixie Oil 1.
28-11-12 Joyner, Helm P. Jarman 1.
18-10-12 Roberson, Selp et al 1.
Rigs, 2; wells drilling, 4; total, 6.

FRANKLIN PARISH

Shut Down

12-11-6e Moore, Exploration Co. 1.
20-13-7e Duncan, Hall P. Harrell 1.
2-15-7e Baker, Robinson & Long 1.
Rigs, 0; wells drilling, 0.

GRANT PARISH

Rigs

18- 9-1e Fee, M. B. Swope 1.
25- 9-2w L. & A., Humble O. & R. 14-A (location).

Wells Drilling

1- 9-1w Swope, Gulf Ref. 1-B.
12- 9-1w Swope, Gulf Ref. 2-B.
16- 7-4w Ellas & Williams, Rue et al 1.
Rigs, 2; wells drilling, 3; total, 5.

JACKSON PARISH

Shut Down

5-15-1e Martin, Charles A. Ferguson 1.
22-17-4w Adams, Grigsby & Co. 1.
34-15-3w Horton, Clarence Houseman 1.
22-16-4w Davis, Louisiana Pet. 3.
Rigs, 0; wells drilling, 0.

LA SALLE PARISH

Rigs

7-10-2e Urania, Modisette Drlg. Co. 4.
6- 8-3e L. & A., Tunica Pet. 25.

Shut Down

9- 7-2e L. & A., Tunica Pet. 23.
2- 9-1e Urania, Wingfield et al 6.
Rigs, 2; wells drilling, 0; total, 2.

MONROE DISTRICT

Rigs

28-20-5e Atkins, United Carbon Co. 1.
1-19-4e Fee, Ladell Properties, Inc. 39.
20-20-5e Dewdrop, Louisiana Gas Products Co. 5.
19-20-4e Moore, Peerless Co. 3 (location).
23-20-3e Parks, Interstate Natural Gas 1.

Wells Drilling

16-20-4e White, Consolidated Carbon Co. 1.
21-20-5e Fee, Louisiana Dev. Co. 38.
7-20-5e Allison, Ouachita Nat. Gas Co. 8.
29-21-5e Townsend, United Carbon Co. 1.
18-18-4e Sicard, Esterling et al 1.
18-18-4e Moore, Jordan Drlg. Co. 1.
16-20-4e Gulley, Ruston Drlg. Co. 1.

Shut Down

25-19-2e D'Arbonne, Ouachita Nat. Gas Producing Co. 2.
21-22-1e Tugurie, C. C. Camette 1.
8-23-1e Johnson, Clark Creek Oil 2.
28-23-2e Hutch, R. W. Rhodes 1.
28-21-4e Raburn, United Carbon Co. 1.
Rigs, 5; wells drilling, 7; total, 12.

NATCHITOCHES PARISH

Rigs

9- 7-7w Cobbie & Hardaman, Gulf Ref. 1 (location).
23-13-6w Thomas, Ohio Oil 1.
24-10-7w Long, Three League Oil 1.
28-11-7w Brown Bros., Wingett et al 1.

Wells Drilling

3-11- 8 Wafer, H. O. Readheimer 1.
35-13- 6 L. & A., Tunica Pet. 24.

Shut Down

23- 5- 6 Clark & Morse, Lawson & Pharris 1.
Rigs, 4; wells drilling, 2; total, 6.

RAPIDES PARISH

Shut Down

29- 5-2e Barrow, Hincey & Macke 1.
7- 5-3w Wettermack, Minnesota Oil Corp.
12- 4-1e Voda, Lebuse O. & G. 1.
3- 4-3e Lanier, Wheeler & Wilbanks 1.
Rigs, 0; wells drilling, 0.

RED RIVER PARISH

Rigs

24-13-11 Kennedy, Gulf Ref. 23

Wells Drilling

5-13- 9 Long Bell, Amerada Pet. Corp. 1.
25-13-11 Robinson, Gulf Ref. 27.
6-12-10 Polly, Magnolia Pet. 24.
7-12-10 Foursome, Magnolia Pet. 14.
16-12- 8 Long Bell, Phillips Pet. 1.

Shut Down

13-11-10 Powell, Alden Oil 1.
Rigs, 1; well drilling, 5; total, 6.

RICHLAND PARISH

Rigs

35-17-5e Seibert, Gulf Ref. 1.
11-16-5e Seibert, Gulf Ref. 2.
10-14-5e Tensas, Helm et al 1.
5-16-6e Earle, Ruston Drlg. Co. 1.

Wells Drilling

30-17-6e Marshfield, Gulf Ref. 1.
5-16-6e Rhymes, Gulf Ref. 2.
36-17-5e Wayne, Gulf Ref. 1.
29-16-6e McCoy, S. D. Hunter 1.
1-16-5e Shiebet, S. D. Hunter 1.
22-17-6e Hicks et al, La. Pet. Co. 1.
2-15-5e Hatch, Harry E. Oliver et al 1.
35-17-6e O'Neil, Ruston Drlg. Co. 1.
22-16-7e Delta Hardwood Co., Standard Drlg. Co. 1.
20-17-6e Mitchell, Stovall Drlg. Co. 1.
1-16-6e Broughton, Texas-Louisiana Carbon Co. 1.

Shut Down

2-17-9e Hawley, Aarnes et al 1.
Rigs, 4; wells drilling, 11; total, 15.

SABINE PARISH

Rigs

28-10-12 Logan, Ark. Fuel Corp. 2.
8- 7-13 Sabine Lb. Co., L. M. Emlet 1.
35-10-12 Hall, Magnolia Pet. 1.

Wells Drilling

33-10-12 Logan, Ark. Fuel Oil Corp. 3.
33-10-12 Logan, Ark. Fuel Oil Corp. 4.
28-10-12 Logan, Ark. Fuel Oil Corp. 5.
26-10-12 Logan, Beckman & Freeman 1.
14- 7-14 H. L. Bowman Co., L. M. Emlet 7.
11- 6-11 La. L. L. L. Co., Magnolia Pet. 1.

5- 9-12 Moore, Moffett et al 1.
34-10-12 Cook Land Co., Ohio Oil 1.
Shut Down
9- 7-12 H. L. Bowman Co., L. M. Emlet 5.
8- 7-12 H. L. Bowman Co., L. M. Emlet 6.
23- 5-12 Wyatt Lb. Co., Lewis Clark Pet. 1.
Rigs, 3; wells drilling, 8. total, 11.

WEBSTER PARISH
Rigs
23-21-10 Cox, Magnolia Pet. 3.
22-21-10 Banks, Ohio Oil 2.
Wells Drilling
21-21-10 Robins, Magnolia Pet. 2.
23-21-10 Davis, La. Oil Ref. Corp. 1.
22-21-10 Coyle, Northwest La. Gas Co. 2.
22-21-10 Bank, Ohio Oil 4.
22-21-10 Cox, Woodley Pet. 1.
Shut Down
22-22- 9 Lee, M. E. Dabls et al 1.
Rigs, 2; wells drilling, 5; total, 7.

WINN PARISH
Rigs
5-12-1w McCarty, Ohio Oil 1 (location).
19-11-3w Southern Minerals Co., M. M. Roark 1.
26-11-1e Urania, Row et al 1.
Wells Drilling
35-13-3w Tremont, Dodge & Cordell 1.
4-12-1w Edenborn, Ohio Oil 2.
27-10-1e Albritton, F. A. Shuman 1.
1-12-2w Tremont, Standard Oil 1.
Shut Down
27-10-1e Albritton, Cherokee Pet. 1.
28-13-3w Milam, J. C. Long 1.
Rigs, 3; wells drilling, 4; total, 7.

TEXAS PANHANDLE

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	13	1,880	2	1
Gray	4	822	0	0
Hutchinson	57	15,340	0	5
Wheeler	5	1,030	2	1
Swisher	1	0	1	0
Total March	80	19,072	5	7
Total February	74	11,232	7	9
Difference	6	7,840	2	2

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	S.D.	Ttl.
Carson	10	62	9	81
Gray	11	35	11	57
Hutchinson	64	162	21	247
Wheeler	3	23	7	33
Miscellaneous	5	36	19	60
Total March	93	318	67	478
Total February	133	304	49	486
Difference	40	14	18	8

WELLS COMPLETED
CARSON COUNTY

Burnett, Acct. 4, Humble Oil & Ref. Co. 1 ..... dry
E. F. Bryan, F. Knappenbarger 1 ..... dry
E. F. Bryan, McMan Oil & Gas Co. 2 250
E. F. Bryan, McMan Oil & Gas Co. 4 300
Fee No. 244, Magnolia Pet. Co. 1 550
Burnett-I, Marland Oil Co. 1 75
G. W. Witter, Mound Valley Oil Co. 1 ..... gas
E. F. Bryan-A, Roxana Pet. Corp. 3 130
Bryan-A, Roxana Pet. Corp. 4 100
E. F. Bryan-D, Roxana Pet. Corp. 1 95
Bryan-D, Roxana Pet. Corp. 3 20
E. F. Bryan, Skelly Oil Co. 1 200
M. P. Co. Fee, The Texas Company 2 160

Wells completed 13
Production 1880
Dry 2
Gas 1
Gas production 19,000,000

GRAY COUNTY

Osborne-Binkley, McMan Oil & Gas Co. 1 221
J. H. Merten-Johns, Phillips Pet. Co. 1 20
Davis, The Texas Company 1 231
Worley & Reynolds, Wilcox-Pampa Oil Co. 19 350

Wells completed 4
Production 822
Dry 0

HUTCHINSON COUNTY

J. F. Weatherly, American Ref. Co. 4. 85
Smith, Block Y Pet. Co. 1 5
Smith, Buffalo Oil Co. 2 50
Smith, Collier & Taylor 1 85
Johnson, Delmar Oil Co. 2 ..... gas
Johnson, Derby Oil Co. 5 1200
Johnson-A, Derby Oil Co. 1 940
J. L. Moore, Dixon Creek Oil Co. 51 600
Smith, Dixon Creek Oil Co. 49 500
Smith, Dixon Creek Oil Co. 50 250
W. B. Haile, Donald et al 1 25
Johnson-A, Empire Gas & Fuel Co. 6 150
Johnson-A, Empire Gas & Fuel Co. 7 540
Johnson-A, Empire Gas & Fuel Co. 8 200
Johnson-C, Empire Gas & Fuel Co. 1 ..... gas
Dial, Gulf Prod. Co. 33 85
E. Cockrell, McIlroy Oil Co. 1 360
Burnett-H, Marland Oil Co. 1 150
Christian, Marland Oil Co. 6 210
Cal Merchant, Marland Oil Co. 3 45
Johnson-Barnum, Midwest Exploration Co. 1 200
Smith, Midwest Exploration Co. 8 360
J. A. Whittenberg, Midwest Exploration Co. 6 1215
E. Cockrell, Mudge Oil Co. 1 15
J. F. Weatherly, Neptune Oil Co. 1 40
Lee Bivins, Phillips Pet. Co. 1 350
Johnson-Cruso, Phillips Pet. Co. 2 50
Johnson-Easter, Phillips Pet. Co. 3 120
Johnson-Easter, Phillips Pet. Co. 4 100
Perkins-George, Phillips Pet. Co. 4 150
Perkins-George, Phillips Pet. Co. 8 225
J. J. Perkins-Martin, Phillips Pet. Co. 9 200
Perkins-Martin, Phillips Pet. Co. 11 155
Perkins-Martin, Phillips Pet. Co. 12 300
Perkins-Martin, Phillips Pet. Co. 13 320
G. A. Whittenberg, Phillips Pet. Co. 3 200
J. A. Whittenberg, Phillips Pet. & Coble Oil Co. 27 400
Byron-Whittenberg, Phillips Pet. Co. 2 800
J. A. Whittenberg-Haines, Phillips Pet. Co. 5 100
J. A. Whittenberg-Patton, Phillips Pet. Co. 14 100
J. A. Whittenberg-Patton, Phillips Pet. Co. 15 50
J. A. Whittenberg-Tinnie, Phillips Pet. Co. 2 ..... gas
Cal Merchant, Prairie Oil & Gas Co. 2 gas
Johnson-A, Prairie Oil & Gas Co. et al 36 95
Johnson-A, Prairie Oil & Gas Co. et al 40 90
Johnson-A, Prairie Oil & Gas & Phillips Pet Co. 41 100
Johnson-A, Prairie Oil & Gas Co. et al 43 520
Johnson-A, Prairie Oil & Gas & Phillips Pet. Co. 45 1000
Johnson-A, Prairie Oil & Gas Co. et al 46 1500
Johnson-A, Prairie Oil & Gas Co. et al 47 280
Johnson-A, Prairie Oil & Gas & Phillips Pet Co. 49 100
Johnson-A, Pure Oil Co. 2 200
Lee Bivins, Roxana Pet. Corp. 1 350
Johnson, Skelly Oil Co. 6 ..... gas
Johnson, Skelly Oil Co. 13 15
T. D. Lewis, The Texas Company 1 85
Johnson-Hagy, White Eagle Oil & Ref. Co. 7 75

Wells completed 57
Production 15340
Dry 0
Gas 5
Gas production 64,000,000

SWISHER COUNTY

Stallings, Keagan & Baker 1 ..... dry

Wells completed 1
Production 0
Dry 1

WHEELER COUNTY

Phillips, Gibson Oil Corp. 6 705
J. M. Porter or L. H. Webb, Hill, Cook & Riley 1 ..... dry
J. F. Coats, Lone Star Gas Co. 1 ... gas
W. E. Curlee, Mid-Kansas Oil & Gas Co. 1 325
J. A. Clark, Piney Oil Co. 1 ..... dry

Wells completed 5
Production 1030
Dry 2
Gas 1
Gas production 21,000,000

HUTCHINSON COUNTY
Rigs

R. Hodges, Phillips Pet. Co. 15, 16.
Christian, Plains Drilling Co. 2.
Sanford, Alamoso Oil Co. 1.
Sanford, Antelope Creek Oil Co. 2.
Pritchard, Barnsdall Oil Co. 1.
Sanford, Canadian River Oil Co. 1.
Smith, Currie & Holmes 1.
H. E. Smith, Dixon Creek Oil Co. 43, 44, 46, 47.
Bost, Golden Eagle Oil Co. 1.
Sanford, Gordon et al 1.
Johnson Brothers, Grimes & Watts 2.
Smith, Lenix Oil Co. et al 2.
Johnson, Manhattan Oil Co. 2.
Smith, Midwest et al 9.
Johnson, Minnehoma Oil Co. and Kistler 4.
W. B. Haile, Pole Cat Oil Co. 1.
J. A. Whittenburg, Phillips Pet. Co. and Goble Oil Co. 20.
J. A. Whittenburg, Phillips Pet. Co. and Gibson Oil Corp. 11, 12.
Smith, Phillips Pet. Co. and Pulaski 7.
Weatherly, Prairie Oil & Gas Co. 4.
Jones, Premier Oil Co. 1.
Johnson Brothers, Pure Oil Co. 5.
Johnson Brothers, Red Hill Pet. Co. 1
Cockrel, Riley et al 1.
Sanford, Skelly Oil Co. 1.
Johnson Brothers, Southwest O. & D. Co. 6-R.
Weatherly, Spur-Mack Drilling Co. 1.
Whittenburg, Summitt Oil Co. 2.
Whittenburg, Sunny Jim Oil Co. 4.
Cheatham, Swinney et al 1.
Smith, Triangle Oil Co. 6.
Kingsland, J. D. Ward 2.
Cockrell, White et al 1.

Wells Drilling

Ingerton, Amarillo Oil Co. 1.
Yake, Anderson & Pritchard 1.
Jasper, Dominion Oil Co. 1.
Whittenburg, Goldeline Oil Co. 3.
Hodges, Golding & Phillips 2.
Christian, Heywood T. Scott 2.
Bivins, Amarillo Oil Corp. 1.
Weatherly-D, American Ref. Co. 5, 6, 7.
Moore, Bain et al 2.
Pritchard, Barnsdall Oil Co. 2.
Lewis, Coble Development Co. 1.
Cockrell, Cockrell-McIlroy Oil Co. 1.
Smith, Cockrell-McIlroy Oi Co. 6.
Johnson Brothers, Concklin et al 1*.
Smith, Currie Brothers et al 4.
Johnson, Delmar Oil Co. 4*.
Johnson, Derby Oil Co. 8.
Johnson, Devonian Oil Co. 7-8.
Cockrell, Diamond Oil Co. 1.
Cockrell, Dixon Creek Oil Co. 1.
H. E. Smith, Dixon Creek Oil Co. 41, 42, 45, 48, 52.
Johnson Brothers-D, Empire Gas & Fuel Co. 6, 7.
Whittenburg, Empire Gas & Fuel Co. 2.
Cockrell, First National Oil Co. 1.
Johnson Brothers-D, Franterhouse & Wetsel 2.
Bost, Globe Oil & Ref. Co. 1*.
Bivins, Great Plains Oil Co. 1.
Smith, Dan A. Japhet 7.
Johnson Bros.-D, Kistler Oil Co. 3, 4.
Sanford, Marland Oil Co. 1.
Whittenburg, Marland Oil Co. 7.
Christian, Marland Oil Co. 7.
Christian, Marland Oil Co. 1.
Merchant, Marland Oil Co. 1.
Carver, Marland Oil Co. 1.
Cockrell, McIlroy Oil Co. 2, 3, 9.
Weatherly, J. P. McKinney.
Cockrell, McMann Oil & Gas Co. 1, 2.
Sanford, McMan Oil & Gas Co. 1.
Sanford, McMillan Oil Corp. 1, 2.
Johnson, Midwest Exploration Co. 2, 6.
Whittenburg, Midwest Exploration Co. 4, 7, 8.
Johnson, Minnehoma Oil Co. and Kistler 3.
Cockrell, Navajo Oil Co. 1.
Sanford, Paramount Oil Co. 2.
Johnson Brothers, Peterson et al 3.
Luginbyhl, Panfield Oil Co. 1*.
Johnson (Cruso), Phillips Pet. Co. 1.
Johnson (Gordon), Phillips Pet. Co. 8.
Johnson (Graham), Phillips Pet. Co. 1.
Johnson (Wiley), Phillips Pet. Co. 1, 2.
Kingsland, Phillips Pet. Co. 1.
Sanford, Phillips Pet. Co. 1.
McMillan, Phillips Pet. Co. 1.
Whittenburg (Burg), Phillips Pet. Co. 6, 7, 8.
Whittenburg (Burg-A), Phillips Pet. Co. 11, 12, 13.
Whittenburg (Haines), Phillips Pet. Co. 4, 3.
Whittenburg (Patsburg), Phillips Pet. Co. 6, 7, 8, 10, 11.
Whittenburg (Patton), Phillips Pet. Co. 13, 18, 20, 21, 23.
Whittenburg (Ruben), Phillips Pet. Co. 1.
Whittenburg (Tennie), Phillips Pet. Co. 5, 6, 7.
J. A. Whittenburg, Phillips Pet. Co. and Coble Oil Co. 22, 23, 24, 25, 26.
J. A. Whittenburg, Phillips Co., Coble Co. and McMillan 5.
J. A. Whittenburg-A, Phillips Co., Coble Co. and McMillan, 6, 7, 8, 9, 10, 11.
Yake, Phillips Pet. Co. 1.
Jameson, Pool & Golding 1.
Johnson-A, Prairie Oil & Gas Co. et al 31, 44, 48, 50, 51, 52, 53, 54, 55, 58, 60, 62.
Johnson-B, Prairie Oil & Gas Co. et al 7, 10, 11, 12, 13.
Johnson-C, Prairie Oil & Gas Co. et al 8.
Weatherly-Prairie Oil & Gas Co. et al 11, 12.
Whittenburg-A, Prairie Oil & Gas Co. 1, 5.
Yake, Prairie, Shamrock and Hagy's 1.
Merchant, Prairie Oil & Gas Co. and Vacuum Oil Co. 1.
Johnson-A, Prairie Oil and Gas Co. 55, 57, 59, 63, 64, 68.
Johnson-A, Prairie Oil & Gas Co. 28, 42*.
Diana Shaw, Prairie Oil & Gas Co. 3.
Whittenburg, Prairie Oil & Gas Co. 1, 2*.
Cal Merchant, Prairie Oil & Gas Co. 2, 3.
Johnson (Cunningham), Skelly Oil Co. 5.
Whittenburg, Skelly Oil Co. 6.
Kingsland, Skiatel Oil Co. 5, 8.
Johnson Brothers, Southwestern Oil & Development Co. 5.
Kingsland, Southwestern Oil & Development Co. 1.
Smith-A, Spring Creek Oil Co. 1.
Smith, Spur-Mack Drilling Co. 1.
Cockrell, Stagger Oil Co. 1.
Cockrell, Sullivan Oil Co. 1.
Smith, Sunburst Oil Co. 3, 4.
Smith, Swinney et al 1*.
Lewis, Timms Oil Co. 1.
Kingsland, Travelers Oil Co. 4.
Johnson Brothers, U. S. Oil Co. 1*.
Smith, J. D. Ward 1.
Smith, Wheeler Oil & Gas Co. 1.
Johnson, White Eagle Oil & Ref. Co. 2.
Smith, Wiles & Keech 1.
Rigs, 64; wells drilling, 83; total, 247.

CARSON COUNTY
Rigs

Burnett-B, Empire Gas & Fuel Co. 1.
Burnett-C, Empire Gas & Fuel Co. 1.
Fee, Magnolia Pet. Co. 2, 3.
E. F. Bryan, Marston Oil Co. 2.
F. E. Bryan, McMan Oil & Gas Co. 8.
E. Cooper, Stubblefield et al 1.
Burnett, The Texas Company 6.

Wells Drilling

E. S. Pollint, Amates Oil Co. 1*.
Burnett Est., American Ref. Co. 6.
E. F. Bryan, Chaplin Ref. Co. 2, 3, 4, 5, 6.
T. D. Lewis, Delmar Oil Co. 1.
C. R. Garner, Empire Gas & Fuel Co. 1.
Lane, Empire Gas & Fuel Co. 1.
M. P. Co. fee, Empire Gas & Fuel Co. 4, 1-B.
J. Lane M. P. Co. fee, Empire Gas & Fuel Co. 1*.
M. P. Co. fee-A, Empire Gas & Fuel Co. 2, 3.
Noel, Gulf Prod. Co. 1.
F. E. Percival, J. K. Hughes Developing Co. 1, 2.
Burnett Est., Magnolia Pet. Co. 3*.
Bryan, Marland Oil Co. 3.
Burnett-J, Marland Oil Co. 1.
J. W. McConnell, Marland Oil Co. 2.
C. R. Garner, Marland Oil Co. 1, 2.
E. F. Bryan, Marston Oil Co. 1, 5.
J. L. Noel, Marston Oil Co. 1*.
J. L. Noel, McMan Oil & Gas Co. 1.
E. F. Bryan, McMan Oil & Gas Co. 5, 6, 7.
F. E. Percival, McMan Oil & Gas Co. 1, 2*.
E. F. Bryan, Nunn & McAuley, 2, 3, 4, 5, 6.
F. E. Percival, Osborne et al 1.
J. W. McConnell, J. T. Sparks 1.
J. L. Noel, J. T. Parks 2.
Bryan, Oil & Gas Co. 1, 2*.
McConnell, Prairie Oil & Gas Co. (was Marland Oil Co.) 1, 2.
J. W. McConnell-A, Prairie Oil & Gas Co. 2, 3, 4.
J. W. McConnell-B, Prairie Oil & Gas Co. 1, 2.
F. E. Percival, Prairie Oil & Gas Co. 1, 2.
Burnett, Republic Prod. Co. 1.
E. F. Bryan-C, Roxana Pet. Corp. 1.
Brown, Roxana Pet. Corp. 1, 2.
E. F. Bryan, Roxana Pet. Corp. 5, 1-C, 2-B*.
Garner, Roxana Pet. Corp. 1, 2.
H. Schafer, Skelly Oil Co. 1, 2, 3, 4.
Burnett, The Texas Company 10.
C. A. Noel, The Texas Company 1.
J. L. Noel, The Texas Company 1.
J. C. McConnell, The Texas Company 1.
C. R. Garner, Wall Oil Co. 1.
Jordan-Brown, White Deer Oil Co. 2.
Rigs, 10; wells drilling, 71; total, 81.

GRAY COUNTY
Rigs

J. M. Patton, British-American Oil Co. 1.
D. W. Osborne, Jack Doyle 1.
G. Cutebank, Foster et al 1.
Fanny Holloway, Johnson & Martin 1.
A. Chapman, Neudigate et al 1.
Coombs, Prairie Oil & Gas Co. 1.
Merten, Prairie Oil & Gas Co. 8-A.
Davis, Pure Oil Co. 5, 6.
G. Cole, C. B. Shafer 1.
C. W. Bradford, J. Williams et al 1.

Wells Drilling

Turneau, Archer, Blake et al 1*.
Crews, Amos et al 1.
C. W. Bradford, Bay Shore Oil Co. 1*.
Bowers, Blackwell & McGee 1.
J. E. Meers, British-American Oil Co. 1.
J. E. Williams, Cole Oil & Gas Co. (was Magdalene Oil Co.) 1*.
W. C. Archer, Empire Gas & Fuel Co. 1*.
B. Hughey, Empire Gas & Fuel Co. 1.
J. F. Meers, Empire Gas & Fuel Co. 1.
J. J. Wall, Empire Gas & Fuel Co. 1*.
Webb, Empire Gas & Fuel Co. 1*.
Herndon, Gray County Pet. Co. 1*.
J. M. Saunders, Gulf Production Co. 1.
Binkley, Humble Oil & Ref. Co. 2*, 3.
T. B. Haggard, Humble Oil & Ref. Co. 1.
A. Chapman, John G. Lane 1*.
Fee, Magnolia Pet. Co. 1.
W. R. Campbell, Pampa Oil Co. 1*.
Mary Leopold, Pampa Oil Co. 1.
H. M. Davis, Phillips Pet. Co. 2, 3, 4.
Davis, Pure Oil Co. 2, 3, 4.
Johnson, Purple Sage Oil Co. 1.
Mrs. Hopkins, Riley & Heck 1.
B. F. Talley, Ruby Oil Co. (was Weir, Kribs & Finklea) 1*.
Worley & Reynolds, Sun Oil Co. 1.
H. M. Barrett, The Texas Company 1.
J. B. Barrett, The Texas Company 1.
Osborne, The Texas Company 1.
Saunders, The Texas Company 3.
Back, Travis et al 1.
Combs & Worley, Wilcox-Pampa Oil Co. 3.
Worley & Reynolds, Wilcox-Pampa Oil Co. 18, 20, 21, 24, 25, 26, 22*, 23*.
Rigs, 11; wells drilling, 46; total, 57.

WHEELER COUNTY

G. A. Morgan, Angus et al 1.
Binkley & Cain, Fain et al 2.
Curlee, Mid-Kansas Oil Co. 3.
F. E. Shelton, Watchorn Oil & Gas Co. 1.

Wells Drilling

E. E. Carlton, Marland Ref. Co. 1.
Burchman Angus et al 1.
S. L. Lewis, Boyles & Johnson 1.
Company, Continental Oil Co. 2.
J. H. Jackson, Continental Oil Co. 2.
S. H. McDonald, Foster et al 1*.
Bentley, Gibson Oil Co. 2, 3.
Phillips, Bentley Oil Co. 5.
Laycock, Magnolia Petroleum Co. 1.
J. A. Worey, Magnolia Pet. Co. 1.
E. C. Johnson, Magnolia Pet. Co. 2, 3, 4.
Curlee, Mid-Kansas Oil Co. 2.
W. E. Bentley, Marland Oil Co. 1, 2.
Close, Murchison and Fain 1*.
T. C. Jones, J. J. Rook Co. 1.
C. W. Porter, J. J. Rook 1.
P. J. Sorenson, Smith Brady et al 1*.
Bentley, The Texas Company 1.
Bentley, Tidal Oil Co. 1.
R. W. Griswold, Upham Gas Co. 1.
C. George, Upham Gas Co. 1.
Noah Smith, The Texas Company 2.
P. J. Sorenson, Wheeler Oil & Gas Co. 1*.
Woodley, E. L. Woodley, Jr. 1*.
Rigs, 3; wells drilling, 30; total, 33.

MISCELLANEOUS PANHANDLE
ARMSTRONG COUNTY
Well Drilling

J. P. Rock, United Oil & Trust Co. 1*.

BRISCOE COUNTY
Well Drilling

J. C. Anderson, C. S. Rice 1.

CHILDRESS COUNTY
Rig

Mrs. Givens, Brookins et al 1.
Well Drilling
B. P. Smith, C. L. Sloane et al 1.

COLLINGSWORTH COUNTY
Wells Drilling

Martha Johnson, Duke & Langford 1.
T. V. Norwood, Martin et al 1*.
Fee, Wischkamper 1.

DALLAM COUNTY
Wells Drilling

Fee, James et al 1.
Capitol Synd., Harry Skelly et al 1.
Capitol Synd., Marland Oil Co. et al 1*.

DEAF SMITH COUNTY
Rig

Mrs. R. A. Hindley, Julian & DeGrace 1.
Well Drilling
Barrett, Red Hill Corp. 1*.

DONLEY COUNTY
Well Drilling

F. E. Harrington, A. T. Drilling Co. 1.

HANSFORD COUNTY
Wells Drilling

J. Adriance, Caldwell et al 1*.
Whitson, Oklavania Oil Co. 1.

HARTLEY COUNTY
Wells Drilling

Frances Farwell, Amerada Pet. Corp. 1.
Lyman & Balfour, Deep Rock Oil Co. 1*.
J. B. Irving, Eslick et al 1.
G. B. Coots, W. W. Holmes 1.
E. S. Collins, J. E. McKanna 1.
Frances Farwell, J. E. McKanna 1.
J. M. Shelton, J. E. McKanna 1.
J. M. Shelton Est., Kork Oil Co. 1*.

HEMPHILL COUNTY
Wells Drilling

J. C. Isaacs, A. J. Calhoun 1*.
Schaller Est., Hoover et al 1*.
Fee, Hoover et al 1.

LIPSCOMB COUNTY
Wells Drilling

Mrs. H. D. May, Everett et al 1*.
A. Barton, McCorkle 1.
C. W. Jones, Smith, Kinsley & Ruby 1.

MOORE COUNTY
Wells Drilling

Masterson-J, Amarillo Oil Co. 1.
Terry Thompson, Amarillo Oil Co. 2.
H. M. Beuchamp, Douglas Oil Co. 1.
J. T. Sneed, Jr., Marland Oil Co. 1.
Kilgore, Humble Oil & Ref. Co. 1.
Rubert, Morton & Co. 1-H*.
Special Sneed, Phillips Pet. Co. 2.
Sneed, Prairie Oil & Gas Co. 2.
Sneed, Moore County Oil Co. 1.
John Lowrey, Shaw Bros 1.
Gober, Prairie & Shamrock 1.

OCHILTREE COUNTY
Rig

Weinett, McCorkle 1.
Wells Drilling
Stickler, W. G. Burton 1*.
R. E. Wamble, Hamilton et al 1*.
R. H. Moore, McCorkle Pipe Line Co. 1*.
Bowden, Standard Dev. Co. 1*.

OLDHAM COUNTY
Well Drilling

Landergin, Prairie Oil & Gas Co. 1.

POTTER COUNTY
Rig

W. H. Bush, Kelmey Oil Co. 1.
Wells Drilling
Townsite, Greater Amarillo Pet. Co. 1*.
J. A. Jones, Farmer Oil & Gas Co. 1*.

RANDALL COUNTY

Campbell & McIlroy, Patterson et al 1*.

ROBERTS COUNTY
Rigs

A. H. Tandy, Pan-State Oil Co. 1.
Wells Drilling
Mrs. H. Ledrick & Sons, Big Bend Oil Co. 1.
L. H. Webb, Hill, Cook & Riley 1.
T. S. Jones, Gibson Oil Corp. 1*.
Gill, Murphy et al 1*.
Hamilton, Charles Page et al 1*.
J. A. Meade, Pettijohn et al 1*.
A. H. Tandy, Trammel et al 1*.

SHERMAN COUNTY
Wells Drilling

Bivins, Gibson Oil Co. 1.
Roach, Phillips Pet. & Savoy 1.
Rigs, 5; wells drilling, 55; total, 60.

NORTH AND WEST TEXAS

Summary of Wells Completed

West Texas—	Comp.	Prod.	Dry	Gas
Crane	14	5,903	3	0
Crockett	1	160	0	0
Ector	1	65	0	0
Fisher	1	0	1	0
Garza	1	0	1	0
Glasscock	1	0	1	0
Howard	11	679	0	0
Jeff Davis	1	0	1	0
Jones	4	780	1	0
Mitchell	4	188	1	0
Pecos	1	427	0	0
Reagan	6	1,526	2	2
Reeves	1	0	1	0
Taylor	1	0	1	0
Upton	29	5,461	4	0
Total March	77	15,173	17	2
Total February	86	35,722	17	0
Difference	9	20,549	0	2
North Central Texas—				
Archer	69	3,929	31	0
Brown	100	14,033	33	0
Callahan	10	0	8	0
Coleman	5	0	5	0
Cooke	9	169	4	0
Eastland	17	1,742	5	2
Jack	2	0	2	0
Montague	30	973	6	0
Palo Pinto	1	5	0	0
Shackelford	39	2,347	9	0
Stephens	5	100	2	0
Throckmorton	9	363	5	0
Wichita	60	1,991	30	0
Wilbarger	19	1,400	3	0
Young	23	1,541	7	0
Total March	398	28,751	150	2
Total February	394	31,094	151	3
Difference	4	2,343	1	1

Summary of Rigs and Wells Drilling

West Texas—	Rigs	Drg.	S.D.	Ttl.
Crane	15	46	3	64
Crockett	1	8	1	10
Howard	4	28	4	36
Jones	5	27	4	36
Mitchell	4	15	2	21
Reagan	2	25	5	32
Upton	11	30	6	47
Miscellaneous	21	62	43	126
Total March	63	241	68	372
North Texas—				
Archer	2	39	8	49
Brown	3	79	20	102
Callahan	4	17	11	32
Coleman	1	12	14	27
Cooke	4	25	0	29
Eastland	4	36	3	43
Jack	0	11	3	14
Montague	5	17	9	31
Shackelford	6	47	18	71
Stephens	1	10	4	15
Throckmorton	1	16	3	20
Wichita	1	36	3	40
Wilbarger	14	54	6	74
Young	5	36	5	46
Miscellaneous	5	22	20	47
Total March	56	457	127	640
Grand total, N and W. Texas, March	119	698	195	1,012
Grand total, N and W. Texas, February	157	662	220	1,039
Difference	38	36	25	27

NORTH CENTRAL TEXAS COMPLETIONS

ARCHER COUNTY

Turbeville, American Ref. Co. 11 100
Turbeville, American Ref. Co. 12 210
Chilson, Arco Oil Co. 1 ..... dry
Andrews, Ashcraft et al 1 ..... dry
Wilson, Barnsdall Oil Co. 2 ..... dry
Abercrombie & Taylor-A, Bridwell & Heydrick 12 ..... dry
Abercrombie & Taylor-A, Bridwell & Heydrick 13 20
Abercrombie & Taylor-A, Bridwell & Heydrick 14 ..... dry
Abercrombie & Taylor-A, Bridwell & Heydrick 16 ..... dry
Key, Bridwell & Heydrick 1 ..... dry
Turbeville-D, L. T. Burns 4 150
Turbeville-D, L. T. Burns 5 215
Turbeville-D, L. T. Burns 6 70
Turbeville-D, L. T. Burns 7 230
Turbeville-D, L. T. Burns 9 300
Turbeville-D, L. T. Burns 10 145
Turbeville-E, L. T. Burns 1 350
Oldham, Continental Oil Co. 17 30
Richardson, Continental Oil Co. 1 ..... dry
Seay, Continental Oil Co. et al 1 ..... dry
Andrews, Consolidated Oil Co. 1 ..... dry
Mangold, Elliott & Roxana Pet. Corp. 1 ..... dry
Ferguson-A, Freeman, Hampton Oil Corp. 21 5
Prideaux, Golding, Cochran & Cline 12 .. 15
Prideaux, Golding, Cochran & Cline 14 .. 20
Prideaux, Golding, Cochran & Cline 16 .. 25
H. L. Ward, Gulf Prod. Co. 3 ..... dry
G. B. Purcell, Gulf Prod. Co. 1 ..... dry
Farmer, Harris et al 1 138
Parrish, T. F. Hunter 4 40
Wolf, Kruger et al 2 ..... dry
Wolf, Kruger et al 3 ..... dry
McCarty, Maer & Staniforth 3 ..... dry
Darlick, Magnolia Pet. Co. 9 11
Hudson, Magnolia Pet. Co. 11 20
Lowe, Magnolia Pet Co. 31 62
Lowe, Magnolia Pet. Co. 32 35
Turbeville, Marland Oil Co. 18 260
Perkins-A, Marland Oil & Perkins 1 .. dry
Ward, Marland Oil & Consolidated Oil Co. 3 121
Ward, Marland Oil & Consolidated Oil Co. 4 30
Lowe, Mid-Kansas Oil & Gas Co. 7 20
Wilson, Minton et al 1 ..... dry
Lyles, Phillips & Skinner 2 ..... dry
Lyles, Plains Prod. Co. 1 140
Lyles, Plains Prod Co. 2 ..... dry
Seals, Plains Prod. Co. 1 ..... dry
Miller, Pois & Schultz 2 ..... dry
Wilson-C, Riner & Bailey 3 ..... dry
Wilson, Pois & Johnson 2 105
Abercrombie & Taylor-A, Roxana Pet. Corp. 16 22
Love, Roxana Pet. Corp. 1 48
Pace, Roxana Pet. Corp. 1 ..... dry
Wolf, Roxana Pet. Corp. 1 ..... dry
Wolf, Roxana Pet. Corp. 2 ..... dry
Jackson, Shappell Oil Co. 40 ..... dry
Turbeville, Simms Oil Co. & Burns 8 .. 200
Turbeville-A, Simms Oil Co. 16 215
Turbeville, Simms & Consolidated Oil Co. 1 ..... dry
Coody, Staley, Wynn & Kruger 1 ..... dry
Love, The Texas Co. 1 50
Lowe, The Texas Co. 2 120
Turbeville-A, Tidal Oil Co. 3 210
Ward, Underwood Drilling Co. et al 3 . 5
Lester, Whittekin et al 1 ..... dry
Neal, Wichita Prod. Co. 6 8
Prideaux, Wilson & Russell 5 109
Prideaux, Wilson & Russell 6 75

Wells completed 69
Production 3929
Dry 31

BROWN COUNTY

Davis, Alford Oil Co. 1 ..... dry
J. H. Fry, Amerada Pet Corp. 17 10
J. H. Fry, Amerada Pet. Corp. 19 400
J. H. Fry, Amerada Pet. Corp. 20 400
J. H. Fry, Amerada Pet. Corp. 21 300
Henslee, Amerada Pet. Corp. 1 160
Metts, Barbara Oil Co. 1 125
Metts, Barbara Oil Co. 2 225
Metts, Barbara Oil Co. 5 80
Willis, Barbara Oil Co. 3 400
Eads, Bowers, et al 4 35
Giddings, Bowers et al 1 ..... dry
Williams, Bowden et al 1 ..... dry
Stout, Bradstreet et al 7 100
Windham, Brit. 2 ..... dry
Ellsberry, Canyon Oil & Gas Co. 5 25
Brown, Christmas 1 ..... dry
Corder, Claypool & Wells 1 ..... dry
Davis, Cranfill & Reynolds 1 ..... dry
Dunn, Cranfill & Reynolds 1 7
Newton, Curry et al 2 100
Newton, Curry et al 3 40
Haynes, Danciger & Rose 5 538
Newton, Empire Gas & Fuel Co. 1 15
Whitley, Fabor & Warren 1 ..... dry
Butler, Fagg et al 3 ..... dry
Shore, Forsythe et al 1 382
Shore, Gibson Oil Corp. 2 100
Newton, Gillespie 8 5
Newton, Gillespie 10 7
Teston, Gilman & McMurray 14 100
Armstrong, Humble Oil & Ref. Co. 8 .. 10
Foster, Humble Oil & Ref. Co. 12 20
Fry, Humble Oil & Ref. Co. 2 150
Fry, Humble Oil & Ref. Co. 3 60
Hodnett, Humble Oil & Ref. Co. 12 .. dry
Hodnett, Humble Oil & Ref. Co. 15 .. 40
Hodnett, Humble Oil & Ref. Co. 4-B .. dry
Hodnett, Humble Oil & Ref. Co. 5-B .. 20
Metts, Humble Oil & Ref. Co. 1 75
Metts, Humble Oil & Ref. Co. 2 40
Newton, Humphrey Bros. 7 ..... dry
Newton, Humphrey Bros. 8 ..... dry
Visart, Hurley Oil Corp. 2 ..... dry
Graham Est., Jarvis et al 1 ..... dry
Fry, Wm. Lester et al 18 200
Leatherwood, McCarter 2 4
Burris, McKanna Oil Co. 1 ..... dry
Newton, McGinley et al 1 ..... dry
Phillips, McLester et al 1 ..... dry
M. E. Fry, Magnolia Pet. Co. 9 ..... dry
Metts, Magnolia Pet. Co. 1 ..... dry
Metts, Magnolia Pet. Co. 2 ..... dry
Prater, Midwest Exploration Co. 6 .. 8
Greseckey, Nelson et al 1 ..... dry
Westerman, Pandem 11 50
Hickman, Phillips Pet. Co. 3 400
Prater, Phillips Pet. Co. 6 ..... dry
Arledge, Prairie Oil & Gas Co. 5 ..... dry
Arledge, Prairie Oil & Gas Co. 6 ..... dry
Pugh, Quinn et al 3 ..... dry
J. H. Fry, Rex-Pyramid Oil Co. 5 358
J. H. Fry, Rex-Fyramid Oil Co. 7 468
J. H. Fry, Rex-Pyramid Oil Co. 10 240
J. H. Fry, Rex-Pyramid Oil Co. 11 450
Glass, Richmond et al 1 ..... dry
Pugh, Root et al 1 ..... dry
Pugh, Root et al 2 ..... dry
Davis, Rosenfield et al 1 30
Newton, Roxana Pet. Corp. 5 10
Newton, Roxana Pet. Corp. 6 ..... dry
White, Sawyer et al 7 10
Henson, Schaffner 3 10
Byler, Shoup Jr. 15 190
J. H. Fry, Sinclair Oil & Gas Co. 5 519
J. H. Fry, Sinclair Oil & Gas Co. 7 738
J. H. Fry, Sinclair Oil & Gas Co. 9 576
J. H. Fry, Sinclair Oil & Gas Co. 10 .. 575
J. H. Fry, Sinclair Oil & Gas Co. 11 .. 850
J. H. Fry, Sinclair Oil & Gas Co. 12 .. 396
J. H. Fry, Sinclair Oil & Gas Co. 13 .. 533
J. H. Fry, Sinclair Oil & Gas Co. 15 .. 35
J. H. Fry, Sinclair Oil & Gas Co. 16 .. 675
Whit, Sorrels et al 1 ..... dry
Byler, The Texas Company 1 45
Hickman, The Texas Company 14 37
Lowe, The Texas Company 9 350
Lowe, The Texas Company 11 325
Lowe, The Texas Company 13 275
Lowe, The Texas Company 19 650
Lowe, The Texas Company 21 510
Lowe, The Texas Company 22 530
Lowe, The Texas Company 25 225
Hodnett, Tidal Oil Co. 7 100
Teston, Valley Oil Co. 5 50
Eads, Vaughn & Evans 1 5
Keller, Vondran et al 1 2
Newton, Wakefield et al 3 51
Wooldridge, Williamson et al 8 ..... dry
Newton, Wilson et al 3 ..... dry

Wells completed 100
Production 14033
Dry 33

CALLAHAN COUNTY

Edwards, Brown Oil Co. 1 150
Alvord, Gibson & Johnson 1 ..... dry
Hickman, Humble Oil & Ref. Co. 1.. dry
Cook, Lawrence et al 1 ..... dry
Walker & Caldwell, Moore et al 1-A .. dry
Rumph, Murchison & Fain 1 ..... dry
Baum, Prairie Oil & Gas Co. 2 5
Nebb, Prairie Oil & Gas Co. 1 ..... dry
Hutchinson, Rinehart et al 1 ..... dry
Crutchfield, Shaw et al 1 ..... dry

Wells completed 10
Production 158
Dry 8

COLEMAN COUNTY

Casey, Clifton & Hughes 1 ..... dry
Davis, Evans et al 1 ..... dry
Casey, Gibson & Johnson 1 ..... dry
Brown, Monroe Prod. Co. 1 ..... dry
Andrews, Moore & Fuhrman 1 ..... dry

Wells completed 5
Production 0
Dry 5

COOKE COUNTY

Dennis, American Ref. Co. 7 35
Dennis, American Ref. Co. 9 20
Dennis, Kewanee Oil & Gas Co. (was Hooser Oil Co.) 17 40
Bayer, Malarnee Oil Co. 1 ..... dry
Ludeman, Scientific Oil Corp. 1 ..... dry
Vogel, Skinner et al 1 ..... dry
Koelser, Stroube & Stroube 2 30
Grotte, Sun Oil Co. 1 ..... dry
Koelser, Stroube & Stroube 1 44

Wells completed 9
Production 169
Dry 4

EASTLAND COUNTY

Connellee, Amyx 4 ..... gas
Connellee, Arkansas Fuel Co. 10 20
Scott, Bryant et al 1 ..... dry
Bond, Cranfill & Reynolds 1 ..... dry
Citizens Water Works, Eastland Oil Co. 1 ..... dry
Duffer, Gholson et al 2 200
Duffer, Gholson et al 3 912
Duffer, Gulf Prod. Co. 1 210
B. L. Duffer, Gulf Prod. Co. 2 182
Hargus, Lewis et al 1 18
Johnson, Lewis et al 1 ..... gas
Lyerla, Lewis & Moore 1 ..... dry
Barr, Milham Corp. 1 ..... dry
Hightower, Panhandle Ref. Co. 26 20
Citizen, Teatsworth et al 1 35
Hightower, The Texas Company 12 15
McCall, Texas Pacific Coal & Oil Co. 1. 125

Wells completed 17
Production 1742
Dry 5
Gas 2
Gas production 6,500,000

JACK COUNTY

Kuykendall, Buttram Pet. Co. 1 ..... dry
Thomason, Dungee et al 1 ..... dry

Wells completed 2
Production 0
Dry 2

MONTAGUE COUNTY

Salmon, Arco Oil Co. 3 42
Rolls Estate, Cato Oil Co. 12 40
Baldin, Continental Oil Co. 2 ..... dry
Howard, Continental Oil Co. 22 16
Howard, Continental Oil Co. 23 17
Howard, Continental Oil Co. 24 41
Howard-A, Continental Oil Co. 18 34
Howard-A, Continental Oil Co. 19 ..... dry
Howard-C, Continental Oil Co. 2 30
Maddox-A, Continental Oil Co. 16 40
Maddox-A, Continental Oil Co. 17 38
Maddox-A, Continental Oil Co. 18 57
Maddox-A, Continental Oil Co. 19 ..... dry
Maddox-A, Continental Oil Co. 20 35
Maddox-C, Continental Oil Co. 1 ..... dry
Rowland-C, Continental Oil Co. 11 28
Rowland-B, Continental Oil Co. 12 142
Rowland-B, Continental Oil Co. 13 77
Salmon et al, Continental Oil Co. 8 23
Howard-Dennis, Gulf Prod. Co. 5 17
Howard-Dennis, Gulf Prod. Co. 6 25
Howard-Dennis, Gulf Prod. Co. 7 11
Howard, Humble Oil & Ref. Co. 5 20
Jones, Humble Oil & Ref. Co. 3 20
Crowe, Pure Oil Co. 1 50
Maddox-D, Pure Oil Co. 5 30
Maddox, Smith Oil Co. 5 70
Bouldin, The Texas Company 2 ..... dry
Maddox-D, The Texas Company 9 70
McGaughy, The Texas Company 1 ..... dry

Wells completed 30
Production 973
Dry 6

PALO PINTO COUNTY

Stuart, Moore & Snebold 8 5

Wells completed 1
Production 5

SHACKELFORD COUNTY

Cook, Amerada Pet. Corp. 4 25
Poindexter, Empire Gas & Fuel Co. 1.. dry
Matthews, Englo Bros. 1-A 8
Poindexter Sec. 59, Gwinnup 1 ..... dry
Moberly, Hall-Mack Oil Co. 2 10
Davis, Hope Pet. Co. 8 15
Davis, Hope Pet. Co. 9 50
Reynolds, Hope Pet. Co. 15 60
Reynolds, Hope Pet. Co. 16 60
Cook, Humble Oil & Ref. Co. 19 10
King, Humble Oil & Ref. Co. 2 ..... dry
Dyer, Midwest Explin. Co. 1 26
English, Midwest Explin. Co. 1 2
Moore, Milham Corp. 5 50
Matthews, Overlees 6 ..... dry
Brooks, Phillips Pet. Co. 3 380
Herron, Ramsey & Maxey Oil Co. 1 ..... dry
Myer, Republic Prod. Co. 1 47
Cook-A-60, Roeser & Pendleton 32 35
Cook-A-60, Roeser & Pendelton 39 775
Cook-A-60, Roeser & Pendleton & Marland Oil Co. 40 30
Cook-C-60, Roeser & Pendleton 14 40
Cook-C-60, Roeser & Pendleton 16 40
Cook-F-60, Roeser & Pendleton 5 15
Cook-A-85, Roeser & Pendleton and Marland Oil Co. 25 25
Cook-A-85, Roeser & Pendleton 27 34
Moberly-A-13, Roeser & Pendleton and Marland Oil Co. 12 2
Moberly-A-13, Roeser & Pendleton and Marland Oil Co. 14 150
Moberly-A-13, Roeser & Pendleton and Marland Oil Co. 15 175
Moberly-B-12, Roeser & Pendleton and Marland Oil Co. 3 20
Moberly-B-12, Roeser & Pendleton and Marland Oil Co. 4 30
Moberly-B-12, Roeser & Pendleton and Marland Oil Co. 5 125
Nail-A-154, Roeser & Pendleton and Marland Oil Co. 1 ..... dry
Nail, Sinclair Oil & Gas Co. 2 ..... dry
Dyer, Southern Pet. Explin. Co. 4 10
Matthews, Tannehill Oil Co. 4 48
Matthews, Tannehill Oil Co. 3 50
Poindexter, Tannehill Oil Co. 1 ..... dry
Moberly, The Texas Co. 1 ..... dry

Wells completed 39
Production 2347
Dry 9

STEPHENS COUNTY

Smith, Edison 1 15
Hill Acct. 1, Mid-Kansas Oil & Gas Co. 6 70
Thorp, Milham Corp. 1 ..... dry
Taylor, Phillips Pet. Co. 1 ..... dry
Hohertz, Texas Pacific Coal & Oil Co. 26 15

Wells completed 5
Production 100
Dry 2

THROCKMORTON COUNTY

L. & C. Reynolds, M. R. Brann 1 ..... dry
Thomas, Cranfill & Reynolds 1 ..... dry
Travis County School Land, Cranfill & Reynolds 1 ..... dry
Graham, Falls Prod. Co. 1 115
Graham, Magnolia Pet. Co. 1 38
Cole, Red Bank Oil Co. 1 50
Graham, Reiter-Foster Oil Co. 2 160
Graham-A, Reiter-Foster Oil Co. 2.... dry
Lee, Reiter-Foster Oil Co. 1 ..... dry

Wells completed 9
Production 363
Dry 5

WICHITA COUNTY

Waggoner, Frank Baldwin 1 30
Waggoner, Frank Baldwin 2 20
Griffin, Bridwell & Heydrick et al 2 .... dry
Waggoner, Bridwell & Mayfield 3 13
Kemp & Kempner, British American Oil & Prod. Co. et al 1 30
Jennings-B, Bullington, Lee & Pendleton 6 20
Kemp & Kempner, E. S. Casey 1 ..... dry
Chapman, Chenault, Palmer & Burch 4 .. 1
Ward & Todd, R. R. Clark et al 3 50
Burnett, Continental Oil Co. 1 ..... dry
Beach, Continental Oil Co. and Magnolia Pet. Co. 1-A ..... dry
Munger, Continental Oil Co. and L. P. Hammond 1 ..... dry
Love, Cooper & McLaughlin 3 186
Waggoner, Culbertson Co. 51 ..... dry
Waggoner, Culbertson Co. 52 ..... dry
Burnett, Dale Oil Corp. 21 ..... dry
Pierce Oil Corp., Empire Gas & Fuel Co. 21 15
Ferguson, Fain-McGaha Oil Corp. 2.... dry
Overby, C. H. Gilchrist 1 ..... dry
Overby, C. H. Gilchrist 2 ..... dry
C. F. Ancell, Gulf Prod. Co. 1 ..... dry
G. Jennings-A, Tr. B, Gulf Prod. Co. 20 8
G. Jennings, Gulf Prod. Co. 18 ..... dry
Waggoner-B, W. Hammon et al 11 ..... dry
Munger-A, Humble Oil & Ref. Co. 1 ..... dry
Collins, Magnolia Pet. Co. 10 ..... dry
Obenhaus, Magnolia Pet. Co. 1 ..... dry
R. Ramming, Magnolia Pet. Co. 1 15
Ramming-B, Magnolia Pet. Co. 18 40
Reilly, Magnolia Pet. Co. 132 75
Staley-Beach, Magnolia Pet. Co. 44 15
Love, O'Donohoe & Gates 1 200
Allingham, John O'Neil 2 ..... dry
Hamilton, O'Neil et al 1 ..... dry
Yarbrough, Johns O'Neil 3 ..... dry
Griffin, Panhandle Ref. Co. 2 20
Griffin, Panhandle Ref. Co. 3 25
Riley-Griffin, Panhandle Ref. Co. 7 .... dry
Riley-Griffin, Panhandle Ref. Co. 8.... dry
Allen & Kemp-D, Petroleum Prod. Co. 6 40
"Shallow" Love-A, Petroleum Prod. Co. 1 ..... dry
"Deep" Love-B, Petroleum Prod. Co. 4 100
"Shallow" Love-B, Petroleum Prod. Co. 5 25
"Shallow" Love-B, Petroleum Prod. Co. 6 15
Waggoner, Pois & Pine et al 1 ..... dry
Mertens, Ramming & Saunders 2 ..... dry
Bywaters, Red River Oil Co. 83 420
Waggoner-C, Rio Bravo Oil Co. 1 ..... dry
Nance, Ryan Pet. Co. 89 35
Nance, Ryan Pet. Co. 90 40
Frankl et al-B, Sheldon et al 1 30
Honaker, C. P. Sheldon 1 60
Obenhaus, C. P. Sheldon 3 56
Waggoner, Simms Oil Co. 1 ..... dry
Griffin, Staley, Wynn et al 3 55
Denny, Sun Oil Co. 1 ..... dry
Stringer, The Texas Company 87 167
Burnett, C. W. Wallace 1 ..... dry
Daume, A. T. Wolf, Trustee. 5 ..... dry
"Deep" Love-B, Petroleum Prod. Co. 3 185

Wells completed 60
Production 1991
Dry 30

WILBARGER COUNTY

Fluhman, Main-McGaha Oil Co. 4..... 75
Fluhman, Fain-McGaha Oil Corp, et al 5 60
Fluhman, Fain-McGaha Oil Corp. 6..... 40
Waggoner-E, Fain-McGaha Oil Corp. et al 4 450
T. J. Milner, Gulf Prod. Co. 1 170
T. J. Milner, Gulf Prod. Co. 2 150
Waggoner-N, Humble Oil & Ref. Co. 8.. 45
Waggoner-O, Humble Oil & Ref. Co. 14 70
Waggoner, Kelly et al 1 ..... dry
Burnett, Madison Oil & Gas Co. 19..... 25
Piper, Magnolia Pet. Co. 24 46
Waggoner-B, Milham Corp. 3 40
Waggoner-L, Milham Corp. 2 110
Waggoner, Murchison Oil Co. 1 ..... dry
Waggoner-I, Phillips Pet. Co. 6 10
Waggoner-Z, Phillips Pet. Co. 1 103
Waggoner-NN, Phillips Pet. Co. 13 35
Waggoner-QQ, Phillips Pet. Co. 2 60
Waggoner-QQ, Phillips Pet. Co. 12 30
Waggoner-QQ, Phillips Pet. Co. 17 202
Waggoner, Phillips Pet. Co. et al 1.... dry

Wells completed 19
Production 1400
Dry 3

YOUNG COUNTY

Gragg, Boller et al 1 40
Hinson, Christie Brothers 1 40
Mathis, Cooney & Hotchkiss 1 465
Hawkins, Cooper & Wolf 1 ..... dry
Peters, Cunningham et al 2 ..... dry
Bagley, Gwynn et al 2 ..... dry
Mothes, Hines et al 1 ..... dry
Benson, King Royalty Co. and Tidal Oil Co. 26 ..... dry
Benson, King Royalty Co. and Tidal Oil Co. 27 50
Benson-B, King Royalty Co. and Tidal Oil Co. 28 20
Benson, McChesney et al 4 ..... dry
Bloodworth, Magnolia Pet. Co. 1 8
Little, Magnolia Pet. Co. 16 44
Fawks, Nash & Windfohr and Phillips Pet. Co. 1 125
Graham, Pemeta Oil Co. 2 85
Mitchell, Pitzer & West 1 125
Graham, Roberts Oil Corp. 1 144
Nicholson, Sun Oil Co. 1 ..... dry
Stewart, The Texas Company 5 5
Benson, Tidal Oil Co. 12 30
Watson, Woods & Holbrook 3 40

Wells completed 23
Production 1541
Dry 7

RIGS AND WELLS DRILLING

ARCHER COUNTY

Rigs

Turbeville, L. T. Burns E-5.
Turbeville, Petroleum Producers Co. C-5.
Wilson, The Texas Company and Trahan 1.
Turbeville, United Producers Co. and Petroleum Prod. Co. B-2.
Longley, Craig & Wilson 2.

Ward, Marland Oil Co. and Consolidated Oil Co. 5.

Wells Drilling

Turbeville, American Ref. Co. 13.
Parkey, Arco Oil Co. and Young 1.
Holliday, Brown et al 1.
Waggoner, Bridwell & Heydrick 1.
Haley, Barnsdall Oil Co. 1.
Perkins, Barnsdall Oil Co. and Trahan 1.
Turbeville, L. T. Burns D-11, E-2, E-3, E-4.
Jackson, L. T. Burns A-1.
Wilson, B. S. & B. Oil Co. 1.
Abercrombie-B, Beasley et al 1.
Helm, Consolidated Oil Co. and Burton 1.
Gose, Continental Oil Co. 60.
Coody, Consolidated Oil and The Texas Company 3.
Edwards, Donahoo & Johnson 1.
Miller, Ferguson et al 1*.
Wilson, Howard et al 1.
Farmer, Harris et al 2.
Ward, Hines et al 2.
Ward, Humble Oil & Ref. Co. 1.
White, Jetter & Anderson 1*.
Mangold, Kimmell & Dillard et al 1.
Chancellor, Kentucky Oil Co. and Roxana Pet. Corp. 1.
Prideaux, Kell & Kruger 5.
Wilson, E. B. Lawson 7.
Wilson D, T. Lamax, Tr., 1.
Wilson, Marland & Kentucky Oil Co. 1.
Lowe, Mid-Kansas Oil & Gas Co. 8.
Turbeville-C, Petroleum Prod. Co. 4.
Wilson, Petroleum Prod. Co. 1.
Lyles, Plains Prod. Co. 4.
Miller, Pois & Shultz 4.
Wilson, Royal Pet. Co. 2.
Swisher, Razor et al 1.
Abercrombie & Taylor-A, Roxana Pet. Corp. 17.
Green-B, Sun Oil Co. 3.
Turbeville-A, Simms Oil Co. 19.
Wilson, Stump et al 1*.
Love, The Texas Company 3.
Farmer, Tidal Oil Co. 2.
Turbeville, United Prod. Co. and Petroleum Co. 1.
Prideaux, Western Oil Corp. 1.
Rigs, 2; wells drilling, 47; total, 49.

BROWN COUNTY
Rigs

Marr, Corzelieus Brothers et al 1.
White, Gibson Oil Corp. 1.
Seawalt, Owens Oil Co. 1.
J. H. Fry, Rex-Pyramid Oil Co. 13, 15.
Ratliff, Shoup, Jr., 1.
Byler, Jack Ward et al.
John Byler, May Ward et al 1.

Wells Drilling

J. H. Fry, Amerada Pet. Corp. 23, 24, 25.
Keelar, Anderson & Shults 1*.
Kilgore, Anna Belle Oil Co. 2.
Metts, Barbara Oil Co. 8.
Willis, Barbara Oil Co. 4, 5.
Dunn, Bedichek 1*.
Stout, Bradstreet et al 8.
Robertson, Brands 1*.
Armstrong, Clark & Kimbel 1*.
Stone, Cranfill & Reynolds 1*.
Newton, Curry et al 4, 5.
Starkey, Garrett & Hammon 1.
White, Gibson Oil Co. 5*.
Brewer, Gray et al 1*.
King, Hays 1*.
Phillips, Henderson & Pitts 1*.
Shore, J. K. Hughes Dev. Co. 1, 2.
Armstrong, Humble Oil & Ref. Co. 10.
J. H. Fry, Humble Oil & Ref. Co. 4*.
Hickman, Humble Oil & Ref. Co. 11, 12.
Hodnett, Humble Oil & Ref. Co. 8-B.
Bell, Humphrey Brothers 1.
Willis, Inland Oil Co. 1.
Davis, Janellen Oil Co. 2.
Hickman, Kone Prod. Co. 2*.
Humphrey, Loofbourrow 1.
Metts, Magnolia Pet. Co. 3.
Chambers, Mahlstedt Oil Co. 1*.
Bull, McIntyre et al 1.
Foster, McKenna 17*.
Shore, McKenna 2, 3.
Wooldridge, McLester Oil Co. 20.
Eddington, Mexana Oil Co. 4.
Suttles, Midwest Exploration Co. 20.
Keeler, Mitcham 1*.
Sheffield, Monroe Prod. Co. 1*.
Lane, O'Nellie et al 1*.
Capps, Peck, Hendrick et al 1.
Turner, Pandem Oil Co. 1.
Keesee, Parker 1.
Hickman, Phillips Pet. Co. 4.
Gaines, Prairie Oil & Gas Co. 1.
East Westerman, Prairie Oil & Gas Co. 7.
Selvidge, Price & Daniels 1.
Pugh, Quinn et al 2.
Schulze, Randall 1.
McDaniel, Randall 1*.
J. H. Fry, Rex-Pyramid Oil Co. 9, 12, 14.
Sheffield, Richards 1.
Pugh, Root et al 3.
Miller, Ross Drilling Co. 1.
Williams heirs, Senion Pet. Co. 1.
Byler, Shoup, Jr., 6, 12.
Gaines, Simms Oil Co. 1.
Miers, Simms Oil Co. 1.
J. H. Fry, Sinclair Oil & Gas 20, 21, 22, 22.
Cross, Sorrells et al 1*.
Davis, Sorrells et al 1.
Martin, Spratt & Eads 1.
Byler, The Texas Company 2.
Lowe, The Texas Company 26, 29*, 31*, 33, 34, 35, 36, 37, 38, 39.
Lee, Thomas, Reynolds 1.
Ariedge, Tidal Oil Co. 1, 2.
Hodnett, Tidal Oil Co. 8.
Moore, Wallace et al 1*.
Shore, Wentz Oil Corp. 7*, 8*, 10, 11.
Newton, West and H-Y Oil Co. 22*.
Rigs, 3; wells drilling, 99; total, 102.

CALLAHAN COUNTY
Rigs

Evans, Canary Brothers et al 1.
Hobb, Rhinehart et al 1.
Terrell, Shirley 1.

Wells Drilling

Jackson, Beams & Kingwood 1.
Bennett, Brannon & Murray 1.
Edwards, Brown Oil Co. 2.
Bryant, Deener 1.
Borsuch, Deep Rock Oil Co. 1.
Ross, Dixie Drilling Co. 1.
Johnson, Empire Gas & Fuel Co. 1.
Alexander, Humble Oil & Ref. Co. 1.
Irvin, Ingleright et al 1*.
Hall, Lowree 1.
Warren, Milham Corp. 1.
Moore, Mission Drilling Co. 1*.
Seale Estate, Mississippi Valley Oil Co. 1.
Ed Baum, Mook-Texas Oil Co. 1.
Bennett & Booth, Navarro Oil Co. 1.
Hays, Oklavania Oil Co. 1.
Cutbirth, Richardson Brothers 1.
Young, Roeser & Pendleton 1*.
McWhorter, Seaboard Oil & Gas Co. 1.
Alvord, Shadbolt & Creighton 1.
Hall, Shadbolt & Creighton 1*.
Miller, Shaw et al 1, 2, 3.
Horn, Swoveland & Dill 1.
Berry, Syndicate Oil Co. 1.
Hatchett, Warren-Hays Oil Co. 1.
Rigs, 4; wells drilling, 28; total, 32.

COLEMAN COUNTY
Rigs

Riley, Burke-Greis & Gwinnup 1.
Caton, Monroe Prod. Co. 1.
Laughlin, Senior Pet. Co. 1.

Wells Drilling

Kingsberry, Allday Drilling Co. 1.
Strozier, Broderick & Calvert 1.
Powell, Brown Oil Co. 1.
Bowden, Browning 1.
Dibrell, Burke-Greis Oil Co. 5*.
Parker, Carter 1*.
Overall, Chaney et al 3.
Crawford, English et al 1*.
Harris, English et al 1.
Phillips, Fleeger 1*.
Newsom, Gracey Brothers 1.
Pfluger, Jewell & Sill 1.
Gray, Magnolia Pet. Co. 3.
Morris, Magnolia Pet. Co. 18.
Halbert, Milham Corp. 1.
Johnson, Newby et al 1*.
Sealy & Smith, Roth & Faurot 1.
Gray, Schermerhorn et al 2.
Moran, Shadbolt & Creighton 1.
Kingsberry, Smythe & Liverman 1*.
Reeves, Taylor et al 1.
Sealy & Smith, Texon Oil & Land and Marland Oil Co. 1*.
Thate, Urban 1.
Fletcher, Van Eman et al 1*.
Wells, Van Eman et al 2*.
Baugh, Wilcox Oil Co. 1.
Witkowski, World Oil Co. 1*.
Rigs, 1; wells drilling, 26; total, 27.

COOKE COUNTY
Rigs

Kelley, Chronic et al 1.
Hopkins, J. K. Hughes Dev. Co. 1.
Stacey, Magnolia Pet. Co. 1.
Hire & Seagraves, Petroleum Inc. Co. 1.
Moore & Richolt, Richardson Brothers 1.
Whaley, Richardson Brothers 1.

Wells Drilling

Hundt, Abernathy et al 1.
Walker, Amerada Pet. Corp. 1.
Dennis, American Ref. Co. 11.
Kleiss, Camp Heydrick and Oil Operators Trust Co. 4.
Hemphill, Homer Chapman 1.
Montgomery, Chapman & Lanier 1.
Otto, Fain, McGaha Oil Corp. 1.
Harris, Gist & Graddy 1.
Evans, Green et al 1*.
Wilson, Hoffer Oil Corp. 1.
Cox, Houseman et al 1.
Embry, J. K. Hughes Dev. Co. 6.
Walling & McCarty, Lynch, Stahl & Burress 1.
Fischer, McElreath & Suggett 1.
Kleiss, Oil Operators Trust Co. 2.
Houston, Simpson et al 1.
Mitchell, Sowell Brothers 1.
Koelser-B, Stroube & Stroube 1.
Dennis, Sun Oil Co. 1.
Rigs, 4; wells drilling, 25; total, 29.

EASTLAND COUNTY
Rigs

Duffer, Gholson et al 4.
Dingler, Simms Oil Co. 1.

Wells Drilling

Grove, Adams et al 2.
Ables, Amerada Pet. Corp. 1.
Eppler, Arnold et al 2*.
Luse, Associated Pet. Co. 1*.
Terrell, Barkley & Crotty 1.
Dawson, Belva Oil Co. 1*.
Good, Belva Oil Co. 1.
Jeffreys, Burke-Greis Oil Co. 1.
Massman, Chestnut & Smith 1.
Spencer, Cranfill & Reynolds 1.
Carter, Eastland Oil Co. 1.
Bishop, Empire Gas & Fuel Co. 1.
Duffer, Gholson et al 5.
Parish, Gholson et al 1.
Parson, Griesedeick 1.
B. L. Duffer, Gulf Prod. Co. 1, 3, 4, 6.
Higgins, Hickey & Haynes 1.
Lyerla, Hoffman & Page 2.
Fee, Keyes et al 1.
Hazel, Livingston et al 1.
Williamson, Mays et al 1.
Sibley, Mook-Texas Oil Co. 3.
McGlohlin, Price & Russell 1.
Johnson, McBride et al 1*.
Thomas, Magnolia Pet. Co. 2.
Thorp, McLester Oil Co. et al 1.
Dyer, Moody et al 1*.
McAllester, M. T. C. Oil Co. 1.
Thorp, Root et al 1.
Watson, Root et al 1.
Hines, Roxana Petroleum Corp. 1.
Blackburn, Shadbolt & Creighton 1.
Lyerla, Simms Oil Co. 1.
Dimmerall, States Oil Corp. 5.
Higginbottam, Texas Pacific Coal & Oil Co. 1.
Norwood, Texas Pacific Coal & Oil Co. 33.
White, Thompson et al 1*.
Weddington, Transcontinental Oil Co. 1.
Rigs, 4; wells drilling, 39; total, 43.

JACK COUNTY
Rigs

Fee, Holman heirs 1.

Wells Drilling

C. K. Cullers, Buttram Pet. Co. 6.
M. Cullers, Buttram Pet. Co. 2.
Gaskin, Buttram Pet. Co. 1.
McClure, Buttram Pet. Co. 1*.
Preston-A, Buttram Pet. Co. 2, 3.
Preston-C, Buttram Pet. Co. 6.
Williams, Buttram Pet. Co. 1.
Gray, Rochelle et al 1*.
Nash, Schermerhorn Oil Co. 1.
C. K. Cullers, Seaboard Oil & Gas Co. 5.
Jackson, Seaboard Oil & Gas Co. 1.
Williams Brothers, Watchorn Oil & Gas Co. 1.
Rigs, 1; wells drilling, 13; total, 14.

MONTAGUE COUNTY
Rigs

Rolls, Cato Oil Co. 11, 13.
Maddox, Gracey & Kahle 5.
Maddox, Seigler et al 1.

Wells Drilling

Nivens, Atlantic Oil Prod. Co. et al 1.
Howard, Barnsdall Oil Co. 4, 5.
Crenshaw, Bridwell & Heydrick 1.
Rolling, Comet Pet. Co. 1.
Hinton, Continental Oil Co. 2.
Howard, F. P. Cullum 1.
Howard, F. H. E. Oil Co. 1-D.
M. Crownover, Gulf Prod. Co. 1.
Howard-Dennis, Gulf Prod. Co. 9.
W. W. Jones, Gulf Prod. Co. 2.
Howard, Humble Oil & Ref. Co. 4.
Jones, Humble Oil & Ref. Co. 4.
Cunningham, Lesh & McCall 1.
Crowe, Pure Oil Co. 4.
Keck-A, Pure Oil Co. 2.
Maddox-C, Pure Oil Co. 7, 8.
Maddox, Smith Oil Co. 6.
Dennis, The Texas Co. 1.
Maddox-D, The Texas Company 10.
Field, Burns & Farris 1*.
Bybee, Chapman et al 1*.
Adams, Dale Oil Corp 1*.
Crump, Beckner & Page 1.
Williams, Dickey et al 1.
Wilson, Green et al 1*.
Rice, Richardson Brothers 1.
Barclay, Washington Oil Co. 1*.
Tinney, Yates & Cumley 1*.
Rigs, 5; wells drilling, 26; total, 31.

SHACKELFORD COUNTY
Rigs

Manley, Brann 1.
Reynolds, Hope Oil & Gas Co. 13, 18.
Davis, Humble Oil & Ref. Co. 1.
King, Humble Oil & Ref. Co. 3.
Dyer, Magnolia Pet. Co. 1.
Webb, Prairie Oil & Gas Co. 1.
Moberly, Roeser & Pendleton 6-B.
Scott, Roeser & Pendleton 1.
Dyer, Southern Pet. Explts. Co. 4.
Jenkins, Eaddingfield & House.

Wells Drilling

Reynolds, Albany Oil Co. 3.
Davis, Amerada Pet. Corp. 3.
Nail, Carter Dev. Co. 6.
Davis, J. S. Cosden, Inc., 1*.
Dyer, Duty 1.
Hill, Godgrey 1*.
Green, Sec. 62, Gwinnup et al 1.
Goodwin, Sec 79, Gwinnup et al 1.
Poindexter, Sec. 61, Gwinnup et al 1.
Davis, Hope Oil & Gas Co. 7.
Reynolds, Hope Oil & Gas Co. 1-B.
Davis, Independent Oil & Gas Co. 4.
Myer, Lee & Dingee 3.
Moberly, Magnolia Pet. Co. 4.
Goodwin, Mid-Kansas Oil & Gas Co. 2.
Newell, Mid-Tex Oil Co. 1*.
Fukusshima, Milham Corp. 1*.
Moore, Milham Corp. 3, 4, 6, 7.
Sedwick, Milham Corp 2, 3, 5*.
Manley, Mississippi Valley Oil Co. 1.
Calvert, Moore 1.
Wilson, Moore & Snebold 1.
Davis, Morton et al 2.
Hill, Osage Oil Corp. 1.
Smalley, Overlees 1.
Ackers, Petitt et al 1.
Brazell, Phillips Pet. Co. 4.
Brooks, Phillips Pet. Co. 4*.
Myer, Republic Prod. Co. 2.
Cook, Sec. 60, Roeser & Pendleton 36-A*, 37-A*, 38-A*, 41-A*, 42-A*, 43-A*, 44-A*, 45-A*, 46-A*, 47-A*, 48-A*, 49-A*, 51-A*, 17-C*, 18-C*, 19-C*, 6-F*, 7-F*.
Moberly, Roeser & Pendleton, Sec. 12, 7-B, 8-B.
Reynolds, Sec. 46, Roeser & Pendleton 1.
Moberly, Rose et al 2.
Poindexter, Ross 1.
Elliott, Sarver et al 1.
Hagan, Shroyer & Pattison 1*.
Harvey, Simmons 2.
Lones, Simms Oil Co. 2.
Nail, Sinclair Oil & Gas Co. 1, 6.
Swenson, Smith et al 1.
Goodwin, Stalker Oil Co. 1.
Harvey, Tomberlin 1.
Goodwin, Turman & Maxwell 1.
Waters, Wallace 1*.
Proctor, Wentz Oil Corp. 3, 4.
Gorsuch, White Eagle Oil & Ref. Co. 1.
Lazarus, Wilson Drilling Co. 1.
Hill, World Oil Corp. 1.
Rigs, 6; wells drilling, 65; total, 71.

STEPHENS COUNTY
Rigs

Kell, Pendet Prod. Co. 6.
Tarrant, Seaboard Oil & Gas Co. 1.

Wells Drilling

Stephens, Goodwin Drilling Co. 1*.
Magers, Hart Oil Corp. 1.
Carey, Hopkins et al 1*.
Glenn, Humble Oil & Ref. Co. 5.
Bradshaw, Lacey et al 1.
Bradshaw, Lyman et al 1.
Groseclose, Lyman et al 1.
Hill, Mid-Kansas Oil & Gas Co. 20.
Richardson, Mid-Kansas Oil & Gas Co. 4.
Chesley, Meredith & Thomas 1.
Fambrough, Morton et al 1*.
Brydon, Shaw & Connor 1.
Cobb, Swensondale Oil Corp. 2.
Martin, Texas Consolidated Oil Co. 9.
Parks, The Texas Company 44-A.
Pierce, The Texas Company 14*.
Pratt, Texas Fidelity Oil Co. 8.
Walker, Trippiehorn Brothers 5*.
Rigs, 1; wells drilling, 14; total, 15.

THROCKMORTON COUNTY
Rigs

M K. Graham-A, Gulf Prod. Co. 3.
Reynolds, Humble Oil & Ref. Co. 1.

Wells Drilling

Buchanan, Associated Pet. Co. 1*.
Conger, Consolidated Oil Co. and Larkin & White 3.
Mathews, Hoffer Oil Corp 3.
Graham, Humble Oil & Ref. Co. 2.
Langford, Humble Oil & Ref. Co. 1.
Ledbetter, Humble Oil & Ref. Co. 1.
Mathews, Humble Oil & Ref. Co. 1.
Graham, Magnolia Pet. Co. 1.
Mathews-E, Moore et al 1.
Mathews, M. H. Overlees 2*.
Parrott, Red Bank Oil Co. 4.
Elliott, Reiter Foster Oil Corp. 2*.
Graham, Reiter Foster Oil Corp. 1*, 3, 4.
Graham, The Texas Company 1.
Rogers, Woolems et al 1*.
Rigs, 1; wells drilling, 19; total, 20.

WICHITA COUNTY
Rigs

Allen & Kemp, Continental Oil Co. and M. Rowe 1.
Henson, Maer & Staniforth 1.

Wells Drilling

Sands, Cannon & Smith 1.
Reilly, Magnolia Pet. Co. 133.
Proctor, Proctor Oil Co. 1.
Waggoner, Baldwin, Frank, 3.
Waggoner, Bridwell, Mayfield et al 4.
Kemp & Kempner, British American Oil Prod. Co. et al 12.
Chapman, Chenault, Palmer & Burch 5.
Waggoner, C. H. Clark et al 1.
Honaker, R. R. Clark et al 2.
Love, Cooper & McLaughlin 4*.
Waggoner, Golding, Cochran & Cline et al 1.
S. B. Burnett-A, Tr. A, Gulf Prod. Co. 41.
Bradley, Hammond et al 1.
Mitchell, T. W. Hooser 7-B.
Munger, T. B. Jackson, Jr., 1.
Van Horn, Kell-Tex Oil Corp. 1.
Lute Ancell, Magnolia Pet. Co. 1.
Honaker, Magnolia Pet. Co. 73.
Ramming, Magnolia Pet. Co. 24-B.
Ramming, Magnolia Pet. Co. 3.
Burnett, W. M. Moore 1-B*.
Riley Griffin, Panhandle Ref. Co. 9.
Love, Petroleum Producers Co. 5-B.
Nance, Ryan Pet. Co. 91.
Kemp & Kempner, Shappell Oil Co. 1.
Frank et al-A, Sheldon et al 2, 3.
Waggoner, Simms Oil Co. 2.
Stringer, The Texas Company 88.
Waggoner, The Texas Company 322, 323.
Burnett, C. W. Wallace 2.
Rigs, 1; wells drilling, 39; total, 40.

WILBARGER COUNTY
Rigs

Fluhman, Fain-McGaha Oil Corp. 9.
Waggoner-NN, Phillips Pet. Co. 15.
Waggoner-QQ, Phillips Pet. Co. 20.

Wells Drilling

Wilbarger County, Atlantic Oil Prod. Co. 1.
Seigler Waggoner, Atlantic Oil Prod. Co. 5.
Streit, Barkley & Meadows 1*.
Waggoner, Consolidated Oil Co. and J. S. Cosden 1.
Murphy, Fain-McGaha Oil Corp. 1.
Waggoner-F, Fain-McGaha Oil Corp. 1.
Fluhman, Fain-McGaha Oil Corp. et al 7, 8*.
Waggoner, Fain-McGaha Oil Corp. 5.
Waggoner-H, Humble Oil & Ref. Co. 19, 20.
Waggoner-L, Humble Oil & Ref. Co. 2*.
Waggoner-M, Humble Oil & Ref. Co. 20, 21.
Waggoner-N, Humble Oil & Ref. Co. 10.
Waggoner-O, Humble Oil & Ref. Co. 5, 15.
Waggoner-R, Humble Oil & Ref. Co. 1.
Waggoner, Kellly et al 1.
Waggoner, A. T. McDannald 1.
Fee, Magnolia Pet. Co. 76.
Piper, Magnolia Pet. Co. 11.
Waggoner, Milham Corp. 10, 11, 12.
Waggoner-C, Milham Corp. 1*.
Waggoner-D, Phillips Pet. Co. 17-A.
Waggoner-F, Phillips Pet. Co. 11.
Waggoner-H, Phillips Pet. Co. 3, 10.
Waggoner-L, Phillips Pet. Co. 6.
Waggoner-O, Phillips Pet. Co. 1.
Waggoner-S, Phillips Pet. Co. 1.
Waggoner-X, Phillips Pet. Co. 1.
Waggoner-Y, Phillips Pet. Co. 6.
Waggoner-HH, Phillips Pet. Co. 7*.
Waggoner-II, Phillips Pet. Co. 1, 2.
Waggoner-JJ, Phillips Pet. Co. 5.
Waggoner-NN, Phillips Pet. Co. 14, 16.
Waggoner-OO, Phillips Pet. Co. 3.
Waggoner-QQ, Phillips Pet. Co. 21.
Waggoner-TT, Phillips Pet. Co. 1.
Waggoner-WW, Phillips Pet. Co. 6.
Waggoner, Prairie Oil & Gas Co. 4.
Waggoner, Roxana Pet. Corp. 3.
Graf, The Texas Company 1.
Waggoner-A, Waggoner Ref. Co. 7, 8.
Zipperle, Weir et al 2.
Woodard, Wichtex Oil Co. 1*.
Rigs, 14; wells drilling, 54; wells shut down, 6; total, 74.

YOUNG COUNTY
Rigs

Hamilton, Bridwell & Heydrick 1.
Graham, Canyon Oil & Gas Co. 1.
Johnson, Coonen & Hotchkiss 1.
Graham Estate, Dyer et al 1.
Weldon, Jacob Oil & Gas Co. 1.

Wells Drilling

Ford, Atkinson & Sandefer 1, 4*, 5.
Gragg, Boller et al 2.
McCluskey, Conner et al 4.
Morrison-A, Coones & Hitchkiss 1.
Scott, Coones & Hitchkiss 1.
Jones, J. S. Cosden 1.
Prideaux, Hunter et al 1.
Griffin, Humphries Corp 1-B*.
Costello Brothers, Independent Oil & Gas Co. 1.
Benson-B, King Royalty and Tidal Oil Co. 29.
Bryan, Lindsey Drilling Co. et al 1.
Graham, Lindsey Drilling Co. et al 1.
Donnell, Liner Drilling Co. 1*.
Bloodworth, Magnolia Pet. Co. 2.
Ware, Nash & Windfohr 1
Donnell, Painter et al 1*
McCluskey, Panhandle Ref. Co. 7*, 17, 20.
Daws, Pardee & Thompson 1.
Scott, Pemeta Oil Co. 1*.
Burns, Pitzer & West 1.
Keller-A, Pitzer & West 5.
Morrison Co., Pitzer & West 3.
Morrison Co.-B, Pitzer & West 1.
Allen Co., Pitzer & West 1.
Jack, Reed et al 7.
Mathews, Reed et al 3.
Prideaux, Robert Oil Corp. 3.
Davis, Roeser & Pendleton 1.
Ford, Roxana Pet. Corp. 12.
Payne, Roxana Pet. Corp. 3.
Scott, Roxana Pet. Corp. 9.
Stovall, Ruthada Oil Co. 3.
Thompson, Schermerhorn Oil Co. 1.
Ragland, Seaboard Oil & Gas Co. and Nash & Windfohr 1.
Burnett, Shonquist Drilling Co. 1.
Fee, E. C. Stovall 5, 6.
Donnell, Sun Oil Co. and Texas Pacific Coal & Oil Co. 5.
Donnell, Texas Pacific Coal & Oil Co. 2.
Moore, Transcontinental Oil Co. 1.
Rigs, 5; wells drilling, 41; total, 46.

MISCELLANEOUS

NORTH CENTRAL TEXAS

CLAY COUNTY

Wells Drilling

Douglas, Caldwell & Culbertson 1.
Johnson, Cove Oil & Gas Co. 1*.
Sanzenbacher, O. H. Foster 1*.
Innman-A, Howard Pet. Co. 2*.
Miller, Lone Star Gas Co. 14.
Cozart, Seaburry et al 1*.
Boyd, Coal Brothers 1.
Wright, Empire Gas & Fuel Co. 1.
Lochridge, Lone Star Gas Co. 6.

COLLIN COUNTY

Wells Drilling

Watkins, Verona Prod. Co. 1*.

COMANCHE COUNTY

Rigs

Ward, Texas Pacific Coal & Oil Co. 1.

Wells Drilling

Mason, Gracey 1*.
Barnes, Humphrey Brothers 1.
Mier, Kirk & Brewer 1*.
Braswell, Moore 1*.
Chapman, Suddereth et al 1*.

DENTON COUNTY
Rigs

Voner & Phillips, Harty et al 1.
Hughes, Rondeau et al 1.
Wells Drilling
Fortenberry, Gainesville Synd. 1*.
Trietsch, Hudson Brothers 1.
Waide, Jones & Eubank 1*.
Wright, McMahon & Daniels 1.
Hampton, Moore & Garrett 1*.

ERATH COUNTY
Wells Drilling

Barton, Gillett 1*.
Finch, Nelson Oil Sund 3*.

FANNIN COUNTY
Wells Drilling

Moore, Erin Prod. Co. 1*.
Broadfoot, Honey Grove Oil & Gas Co. 1.

FOARD COUNTY
Wells Drilling

McAdams, Humble Oil & Ref. Co. and Navarro Oil Co. 1.

GRAYSON COUNTY
Wells Drilling

Taylor, Richardson Brothers 1.

HARDEMAN COUNTY
Wells Drilling

Ayres, Murchison Oil Co. 1.

HASKELL COUNTY
Wells Drilling

Ballard, Kouri et al 3.
Reynolds, Moody Oil Corp. 1.
Hughes, Ramsey & Maxey 1.
Colbert, Weart & York 1*.

KNOX COUNTY
Rigs

Goode, Humble Oil & Ref. Co. 1.
Wells Drilling
Beavers, Deep Rock Oil Co. 1.
Coffman, Deep Rock Oil Co. 1.
Jones, Deep Rock Oil Co. 1*.

McCULLOCH COUNTY
Wells Drilling

Rice, Gibson Oil Corp. 1*.
Smith, McClung et al 1*.

PALO PINTO COUNTY
Wells Drilling

Humphries, DeWitt et al 1*.
Hart, Dixie Drilling Co. 1*.
Seamon, Dixie Drilling Co. 1*.
Rasmussen, Pender Prod. Co. 2*.
Slemmon, Pender Prod. Co. 3.

PARKER COUNTY
Wells Drilling

Stickford, Coffin et al 1.
Rigs, 5; wells drilling, 22; well shut down, 20; total, 47.

WEST TEXAS COMPLETIONS

CRANE COUNTY

University, Church & Fields 1	90
W. H. Cowden Co., W. E. Duffy et al 1	dry
J. T. McIlroy, Gulf Prod. Co. 7	1160
University, Humble Oil & Ref. Co. 1	325
O'Keefe-University, Magnolia Pet Co. 4	60
University, Magnolia Pet. Co. et al 4	35
Hughes-B, Marland Oil Co. 2	dry
Hughes-C, Marland Oil Co. 4	dry
Hughes-D, Marland Oil Co. 6	60
State-Lasseter, Prairie Oil & Gas Co. 5	140
University, Stidham & Thrasher 1	18
King, The Texas Company 13	25
University-E, Tidal Oil Co. 1	84
University-F, Tidal Oil Co. 1	3906
Wells Completed	14
Production	5903
Dry	3

CROCKETT COUNTY

Powell, Republic Prod. Co. 2	160
Wells completed	1
Production	160

ECTOR COUNTY

G. W. Connell-A, J. S. Cosden 1	65
Wells completed	1
Production	60

FISHER COUNTY

Waller, Baldridge, Dillard & Clark 1	dry
Wells completed	1
Production	0
Dry	1

GARZA COUNTY

Connell-A, Emerald Oil Co. 1	dry
Wells completed	1
Production	0
Dry	1

GLASSCOCK COUNTY

Nellie Calder, Marland Oil Co. 1	dry
Wells completed	1
Production	0
Dry	1

HOWARD COUNTY

E. W. Douthitt, Humble Oil & Ref. Co. 2	30
Scott, Lockhart & Co. 1	25
Otis Chalk, Lockhart & Co. 2	70
Mary Chalk, Magnolia Pet. Co. 3	75
Hyman Chalk, Magnolia Pet. Co. 2	2
Otis Chalk, Marland Oil Co. 11	45
Otis Chalk-A, Marland Oil Co. 3	50
Otis Chalk-A, Marland Oil Co. 4	55
Otis Chalk-B, Marland Oil Co. 1	77
H. R. Clay-A, Marland Oil Co. 2	125
H. R. Clay, Reeves & Apperman 1	125
Wells completed	11
Production	679
Dry	0

JEFF DAVIS COUNTY

McCutcheon, Humble Oil & Ref. Co. 1	dry
Wells completed	1
Production	0
Dry	1

JONES COUNTY

Cox, Marland Oil Co. 1	dry
Mason, Marland Oil Co. 2	110
Beasley, Phillips Pet. Co. 1	350
Walling, Phillips Pet. Co. 2	320
Wells completed	4
Production	780
Dry	1

MITCHELL COUNTY

Adams, Lease 2, California Co. 5	78
Morrison, Lease 2, California Co. 18	45
Grancis Adams, Magnolia Pet. Co. 3	65
C. P. Conoway, Owens & Sloan 1	dry
Wells completed	4
Production	188
Dry	1

PECOS COUNTY

I. G. Yates Acct. 2, Mid-Kansas Oil & Gas Co. 1	427
Wells completed	1
Production	427

REAGAN COUNTY

University, Big Lake Oil Co. 73	gas
University, Big Lake Oil Co. 82	1450
University, Big Lake Oil Co. 99	gas
University, Big Lake Oil Co. 105	75
White, C. M. Cope et al 1	dry
University, Hiawatha Oil Co. 1	dry
Wells completed	6
Production	1525
Dry	2
Gas	2
Gas production	18,000,000

REEVES COUNTY

State, Grisham & Hunter 1	dry
Wells completed	1
Production	0
Dry	1

TAYLOR COUNTY

Cox, Sanger Oil & Ref. Co. 1	dry
Wells completed	1
Production	0
Dry	1

UPTON COUNTY

M. L. Baker, Bryant & Atlantic 1	30
Burleson, Dixie Oil Co. 10	dry
Burleson, Dixie Oil Co. 19	895
Ed. S. Hughes, Gulf Prod. Co. 1	50
J. T. McElroy-D, Gulf Prod. Co. 1	dry
Burleson, Independent Oil & Gas Co. 6	dry
Taylor, Independent Oil & Gas Co. 13	60
Taylor, Independent Oil & Gas Co. 73	42
Wooley, Independent Oil & Gas Co. 12	125
Wooley, Independent Oil & Gas Co. 13	1631
Wooley, Independent Oil & Gas Co. 14	50
Estep, Marland Oil Co. 10	200
Estep, Marland Oil Co. 12	60
Gibbs, Marland Oil Co. 2	60
Powell, Marland Oil Co. 3	65
Sanger, Marland Oil Co. 20	20
Shirley-A, Marland Oil Co. 1	220
Bowen, Roxana Pet. Corp. 8	661
Bowen, Roxana Pet. Corp. 9	160
Shirley, Simms Oil Co. 3	70
Jones, Skelly Oil Co. 1	dry
Baker, Sun Oil Co. 1	40
Burleson, Sun Oil Co. 8	60
King, The Texas Company 20	191
King, The Texas Company 21	138
King, The Texas Company 22	198
Lane-A, Texas Pacific Coal & Oil Co. 4	320
Sherk, Texas Pacific Coal & Oil Co. 5	75
Sherk, Wentz Oil Corp. 4	30
Wells completed	29
Production	5451
Dry	4

WEST TEXAS DRILLING
CRANE COUNTY
Rigs

University, Church & Fields 2.
Duoil-University, Church & Fields 1.
Crier-McElroy, Gulf Prod. Co. 6, 4.
O'Keefe-University, Magnolia Pet. Co. 6, 9
State-Lasseter, Magnolia Pet. Co. 3.
University-Hardwick, Magnolia Pet. Co. 3, 5, 7, 8.
University-H, Tidal Oil Co. 1.
University, The Texas Company 1.
University, Tidal Oil Co. 2, 3, 4.
University-H, Tidal Oil Co. 1.
Cowden, Zweifel et al 1.
Wells Drilling
University, Church & Fields 1.
University, Carl Cromwell et al 1.
University, Eastland Oil Co. & Collett, 2, 4, 8.
W. N. Waddell, Gulf Prod. Co. 1.
State-Lasseter, Gulf Prod. Co. 3, 4, 5, 6, 7.
University, Humble Oil & Ref. Co. 2, 3, 4, 5, 6, 7, 8.
University-A, Independent Oil & Gas Co. 1.
O'Keefe-University, Magnolia Pet. Co. 7.
State-Lasseter, Magnolia Pet. Co. 2.
University-Hardwick, Magnolia Pet. Co. 2, 4.
Cowden, McCamey & Zoch 1.
Hughes, McMan Oil & Gas Co. 2.
Collett, Prairie Oil & Gas Co. 1*.
State-Lasseter, Prairie Oil & Gas Co. 1.
University, Prairie Oil & Gas Co. 6.
University-A, Simms & Atlantic 4, 5, 6, 7.
University-C, Simms & Atlantic 1, 2.
University-D, Simms & Atlantic 1.
Brookfield, Ben D. Simon et al 1.
Cowden, The Texas Dev. Co. 1*.
Rigs, 19; wells drilling, 35; shut down, 2; total, 56.

CROCKETT COUNTY
Wells Drilling

Couch, Cumberland Oil & Gas Co. 1*.
University, Geo. A. Henshaw 1.
Powell-B, J. H. Hughes 2.
Shannon, Magnolia Pet. Co. 2.
University, Schaffer et al 1*.
Powell, P. H. Williams 1.
Scheeman, World Oil Corp. 1.
University, Young & Cromwell 1.
Coates, V. T. Bolin & Co. 1.
Pierce, Marland Oil Co. & Wallace 1.
Rigs, 0; wells drilling, 8; shut down 2; total, 10.

HOWARD COUNTY
Rigs

Chalk-A, Marland Oil Co. 8.
H. R. Clay, Marland Oil Co. 5.
Cuitar Est., Marland & Zoch 1.
H. R. Clay, Midwest Exploration Co. 1.
Wells Drilling
Chester Jones, Bowers et al 1*.
A. J. Hooks, Bristow & Merrick 1, 2*, 3.
Otis Chalk, Fred Carey 1*.
H. R. Clay, Comet Pet. Co. 1.
H. R. Clay, Dixie Oil Co. 1.
Mrs. Dora Roberts, L. C. Harrison et al 1.
Otis Chalk, Lockhart & Co. 3*.
Otis Chalk-A, Lockhart & Co. 2.
Mary Chalk, Magnolia Pet. Co. 4.
Hyman Chalk, Magnolia Pet. Co. 2.
Kelly Chalk, Marland Oil Co. 1.
Chalk-A, Magnolia Pet. Co. 7, 8.
Sloan Chalk, Magnolia Pet. Co. 1.
Sarah Hyman, Magnolia Pet. Co. 2.
Otis Chalk, Marland Oil Co. 10.
Chalk-A, Marland Oil Co. 5, 6, 7.
Chalk-C, Marland Oil Co. 1.
Chalk-E, Marland Oil Co. 1.
H. R. Clay, Marland Oil Co. 2*, 3, 4, 5.
H. R. Clay-A, Marland Oil Co. 3, 4.
H. R. Clay-B, Marland Oil Co. 1.
H. H. Clay-C, Marland Oil Co. 1.
H. R. Clay-D, Marland Oil Co. 1.
Bryse, Marland Oil Co. 1.
H. R. Clay, Reeves & Apperman 2.
Rigs, 4; wells drilling, 30, shut down, 5; total 39.

JONES COUNTY
Rigs

Mrs. A. Zipps, Gault Brown et al 1.
J. S. Swan, Marston Oil Co. 1.
Walling-Tessie, Phillips Pet. Co. 4.
Joe Winters, Phillips Pet. Co. 3, 4.
Oscar Clapp, Tomberlin et al 1.
Wells Drilling
Howell, Atlantic Oil Prod. Co. & Landreth 2.
Southard, Bateman & Campbell 1*.
L. H. Herndon, Campbell et al 1*.
Armand & Taylor, Consolidated Oil Co. 1*.
Largent, Gibson & Johnson 1*.
S. W. King, Gillette & Hickey and Cowboy Evans 1.
M. E. Young, Gillette & Hickey 1*.
George B. Birchfield, Grisham & Hunter & Wildman 1.
Williams, Grisham & Hunter & Wildman 1*.
Cranston, Hart & Cole 1.
John Sears, Hurley Oil Co. 2.
Smith, Hutson & Weaver 1*.
J. H. Milsap, Kirk & Brewer 1*.
Larson, Marland Oil Co. 1*.
E. Howell, Marston Oil Co. 1.
H. Evans, Mid-Continent Pet. Corp. 1.
Thornton, Midwest Exploration Co. 3, 4.
Will Myatt, McLester et al 1.
Culbertson, Victor H. Martin 1.
Manley, Muse & Robertson & Cowboy Evans 1*.
Mason, Phillips Pet. Co. 1.
Thornton, Phillips Pet. Co. 1.
Walling, Phillips Pet. Co. 3.
Bristow, Shaw & Rathke et al 1*.
J. P. Willis, W. G. Stough et al 1*.
J. M. Higgs, Stebbins Oil Co. 1*.
Caton, Swensondale Oil Co. 1*.
A. W. Clark, World Oil Co. et al 1.
W. H. Lee, World Oil Co. 1.
Reeves, Zeigler et al 1*.
Rigs, 6; wells drilling, 16; shut down, 15; total, 37.

MITCHELL COUNTY
Rigs

F. A. Adams, Magnolia Pet. Co. 4.
Dowlin, Teas & Stivers 1.
C. Way, Robert Thraves 1.
Wells Drilling
W. R. Womack, Atlantic Oil Prod Co. 8.
McKenzie, B. H. Cogdell 1*.
C. M. Adams, Eastland Oil Co. 2.
C. M. Adams, Magnolia Pet. Co. 8*.
Mary Foster, Magnolia Pet. Co. 4.
T. L. McKiney, Magnolia Pet. Co. 1.
W. W. Watson, Magnolia Pet. Co. 2.
Griffin, Morrison & Thompson 1.
Hardee, Teas & Stivers 1.
C. M. Adams, Lse. 2, The California Co. 4.
W. H. Butler, Lse. 2, The California Co. 1.
J. J. Handley, The California Co. 3.
E. Morrison, Lse. 1, The California Co. 1.
Ed. Strain, Paul Teas 1.
Pettiflis, Lse. 2, California Co. 3, 4.
J. E. Dollen, B. E. Walter et al 1*.
W. F. Sanders, J. C. Jancey 1*.
Rigs, 3; wells drilling, 14; shut down, 4; total, 21.

REAGAN COUNTY
Wells Drilling

University, Big Lake Oil Co. 17-B, 37-A*, 57, 72, 89, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 122, 123.
University, Gr. 1, Texon Oil & Land Co. 39, 61, 8-A, 9, 10, 1-B*.
University, Gr. 2, Texon Oil & Land Co. 6.
J. D. Suggs, The Texas Company 2.
Rigs, 0; wells drilling, 27; shut down, 2; total, 29.

UPTON COUNTY
Rigs

Baker, McMan Oil Co. 1.
Bowen, Roxana Petroleum Corp. 16, 19, 22, 23.
Lane-A, Texas Pacific Coal & Oil Co. 7.
Wells Drilling
Hughes, Amerada Pet. Corp. 6.
Lane, Beaty et al 1.
Burleson, Dixie Oil Co. 21, 22, 23.
Hughes, Dixie Oil Co. 13.
J. T. McElroy-B, Gulf Prod. Co. 1.
Giddings, L. E. Hultz et al 1*.
Ricker, Humble Oil & Refining Co. 3, 4.
Taylor, Independent Oil & Gas Co. 8*, 48, 60, 71*, 94.
Benton, Marland Oil Co. 3*.
Burleson, Marland Oil Co. 3, 34*.
Estep, Marland Oil Co. 11*.
University, Marland Oil Co. 1.
Lane-C, Prairie Oil & Gas Co. 1.
Baker, Republic Prod. Co. 6.
Bowen, Roxana Pet. Corp. 15, 17, 20, 21.
Hull, Sarton Bros. & Davis 1*.
Hughes, Snowden & McSweeney 1.
King, The Texas Company 15*, 19, 23, 24.
Lane-A, Texas Pacific Coal & Oil Co. 2, 3, 5, 6.
Rigs, 6; wells drilling, 28; shut down, 8; total, 42.

MISCELLANEOUS WEST TEXAS
ANDREWS COUNTY
Wells Drilling

J. S. Means, C. B. McKennon (was Neff et al) 1.
Cowden, A. G. Carter & Zweifel 1*.
W. B. Taylor, Maer & Staniforth 1.

BORDEN COUNTY
Rig

Snodgrass, Stivers et al 1*.

CASTRO COUNTY
Rig

M. Siemons, Colorado Oil & Ref. Co. 1.
Wells Drilling
Clements, Gulf Prod. Co. 1.
Crum, Mystery Oil Co. 1*.

COCHRAN COUNTY
Well Drilling

G. C. Landon, J. C. Whicker 1*.

COKE COUNTY
Wells Drilling

E. C. Rawlings, Lipan Oil Co. 1.
S. M. Conner, Lipan Oil Co. 1*.

CONCHO COUNTY
Wells Drilling

Sam Waring, Associated Pet. Co. 1.
Hartgrove, Arkansas Fuel Co. 1*.
William Hughes, Mullins, Davis & Davenport 1.
Hartgrove, The Exploration Co. 1*.
Hartgrove, Gene Mays et al 1*.
Sansom, Marland Oil Co. & Taylor 1*.

CROSBY COUNTY
Well Drilling

O. L. Slaton, El Capitan Oil Co. 1*.

CULBERSON COUNTY
Well Drilling

Radford, James H. Gardner et al 1*.

DICKENS COUNTY
Wells Drilling

Fitchford, Bowser Mickels et al 1*.
Blackwell, Moutray Oil Co. & Clancey & English 1*.
Jones, Moutray Oil Co. and Clancey & English 1*.

ECTOR COUNTY
Well Drilling

Connell-A, J. S. Cosden, Inc. et al 2.

FISHER COUNTY
Wells Drilling

J. A. Danise, Sinclair Oil & Gas Co. (was Bourbon Royalty Co.) 1.
Rochelle, Marland Oil Co. (was Caldwell et al) 1.
R. G. Anderson, California Co. 1.
Maggenheimer, California Co. 1.
Lanius, Danciger Oil & Ref. Co. (F. P. Zoch et al) 1.
Langford, Hucony Gas Co. 1*.
W. A. Cross, Barber Oil Co. (was Mason Oil Co.) 1.
Marberry, R. W. Raney 2*.
C. M. Webb, Fred Phillips 1.
W. A. Howe, Stearne & Streete 1*.
R. M. Clayton, F. P. Zoch et al 1.

FOARD COUNTY
Well Drilling

L. McAdams, Humble Oil & Ref. Co. and Navarro Oil Co. 1.

GARZA COUNTY
Rig

Justice, Pandem Oil Co. 1.
Well Drilling
D. Boren, Emerald Oil Co. 1.

GLASSCOCK COUNTY
Rig

F. G. Oxsheer, Green et al 1.
Well Drilling
W. R. Settles, Texon Oil & Land and Marland Oil Co. 1.

HALL COUNTY
Well Drilling

Owens, Seifert et al 1*.

HOCKLEY COUNTY
Well Drilling

Ellwood, El Capitan Oil Co. 1*.

HARDEMAN COUNTY
Well Drilling

Ayres, Murchison Oil Co. 1.

IRION COUNTY
Wells Drilling

Abe Mayer, Cash Dollar et al 1*.
G. J. Bird, Cash Dollar et al 1*.

JEFF DAVIS COUNTY
Well Drilling

J. Z. Means, J. K. Hughes Dev. Co. 1*.

KENT COUNTY
Well Drilling

Scoggins, Douglas Oil Co. 1.

KIMBLE COUNTY
Well Drilling

Harrison, Dixie Oil Co. 1*.

KING COUNTY
Rig

Patton, Midwest Exploration Co. 1.
Wells Drilling
F. Patton, Hoffer Oil Co. 1*.
Gilson & Johnson *.
Patton, J. L. Pattison 1*.
Patton, Phillips Pet. Co. 1.
Petton, Sinclair Oil & Gas Co. *.
Petton, White Eagle Oil & Ref. Co. 1*

KNOX COUNTY
Wells Drilling

Jones, Deep Rock Oil Co. 1.
Beavers, Deep Rock Oil Co. 1.
Big Four, Deep Rock Oil Co. 1.
Goode, Humble Oil & Ref. Co. 1.

LAMB COUNTY
Rig

Yellowhouse, R. C. Marrs et al 1.

LUBBOCK COUNTY
Well Drilling

Bowles Ranch, Sam Arnett et al 1*.

LYNN COUNTY
Well Drilling

C. O. Edwards, The Hart Oil Corp. 1*.

MENARD COUNTY
Wells Drilling

White, J. R. Lewis et al 1*.
Klothman, Clark et al 1*.

MOTLEY COUNTY
Rig

C. D. Bird, Wheeler et al 1.
Well Drilling
J. W. Owens, Chechaco Oil Co., (J. W. Penning et al of Amarillo) 1*.

NOLAN COUNTY
Rigs

M. C. McElmurry, A. G. Malone et al 1.
Pepper, Herbert Oil Co. (was McClesky et al) 1.
Scott, Phillips Pet. Co. 1.
Wells Drilling
Booth, J. H. Winemiller Corp. (was Peters et al) 1.
Allen, Thomas & Reynolds 1.
Longbotham, Zweifel et al 1.

PARMER COUNTY
Well Drilling

Farwell, Humble Oil & Ref. Co. 1.

PECOS COUNTY
Rigs

Jasper, Buell & Hagen 1.
Yates, Mid-Kansas Oil & Gas Co. 4-A.
Blakesley, Texon Oil & Land and Marland Oil Co. 1.
Wells Drilling
Holmes, Arkansas Fuel Oil Co. 1.
Yates, Crosby Drilling Co. 1.
Stockton, Del Rio Drilling Synd. 1*.
Yates, Texon Oil & Land Co. 1.
Trees, Benedum & Trees 1*.
Batcheler, Buell et al 1.
University, Buell & Hagen 1.
Scharff, Cromwell & Kimberlin 1.
Fleinstorm, Kirby Oil Co. 1.
Pershenson, John Droppleman 1.
Bennett, Quinby et al 1.
Gray, Quinby et al 1.
Townsite, Quinby et al 1*.
Union Land Co., California Co. 1.

REEVES COUNTY
Wells Drilling

Caldwell, Deep Rock Oil Co. 1.
A. A. Kinney, Exploration Co. 1*.
Kloh, Humble Oil & Ref. Co. 1-B.
Biggs, World Oil Co. 1.

RUNNELS COUNTY
Wells Drilling

W. W. King, Associated Pet. Co. (was Bell & Moore) 1*.
Ferguson, Moore & Bell 1*.
R. M. McMillan, Lou Ladd et al (was Frank Yates) 1.

SCHLEICHER COUNTY
Wells Drilling
J. A. & W. T. Whitten, Beavers & Leath et al 1*.
Pall Robinson, Thomas Grey et al 1*.
SCURRY COUNTY
Well Drilling
T. C. Stincon, Northwest Co. 1*.
STERLING COUNTY
Well Drilling
Clark, J. P. Williams 1*.
STONEWALL COUNTY
Well Drilling
J. Ward, McCamey & Zoch 1.
TAYLOR COUNTY
Rigs
Hendry, Gibson & Johnson 1.
J. R. Griffith, World Oil Co. 1.
Wells Drilling
Fee, City of Abilene 1*.
J. A. Hammon, Dorning & Perrine 1.
Haines & Hamilton, Oil Operators Trust Co. (was Gibson & Johnson) 1*.
D. D. Huddleston, Grisham & Hunter 1.
Hunt, W. E. Halbert et al 1*.
Mattie Jacobs, Humble Oil & Ref. Co. 1.
Dora Smith, Midwest Exploration Co. 1*.
Toombes, Midwest Exploration Co. 1.
Mrs. Alice Rose, Morrison & Thompson (was Noodle Creek Oil Co.) 1.
Lattimer, Owen & Sloan 1.
Sam Hutman, Roeser & Pendleton 1*.
Ike Brown, Sanger Oil & Ref. Co. 1*.
Gillespie, Sanger Oil & Ref. Co. 1.
TERRELL COUNTY
Well Drilling
Robertson, E. T. Williams et al 1*.
TERRY COUNTY
Well Drilling
Brownsfield, Kingsland Oil & Potash Co. 1*.
TOM GREEN COUNTY
Well Drilling
Llano, Marland Oil Co. 1.
VAL VERDE COUNTY
Wells Drilling
Moore Est., A. Blume et al 1*.
Holman, Curso Williams 1*.
Sellars, Douglas Oil Co. 1*.
Russell, East Del Rio Oil Co. 1*.
Sellars, Hiawatha Oil Co. 1*.
Whitehead, Independent Operators 1*.
Mills, O. O. Owens 1.
W. S. Stevens, Transcontinental Oil Co. 1*.
WARD COUNTY
Well Drilling
Sealey, Marland Oil Co. 1.
WINKLER COUNTY
Rigs
Hendricks, Pure Oil Co. 1.
T. G. Hendricks, Group 1, Humble Oil & Ref. Co. 1.
T. G. Hendricks, Humble Oil & Ref. Co. 1.
Wells Drilling
T. G. Hendricks, Gulf Prod. Co. 1.
C. W. Cowden, Champlin Drilling Co. 1*.
Tobe Morton, McCullough Oil Co. 1.
State, R. S. Matthews et al 1.
Hendricks, Independent Oil & Gas Co. 1.
John Sealey, F. P. Zoch et al 1.
Amburgey, L. D. Ladd, Hill et al 1.
M. M. Leeman, Skelly Oil Co. 1.
Hendricks, Southern Crude Oil Purchasing Co. 1-C (was No. 2).
Hendricks, Southern Crude Oil Purchasing Co. 2-C (was No. 3).
Scarborough, Llano Oil Co. 1*.
Hendricks, Southern Crude Oil Purchasing Co. 3-C.
Rigs, 21; wells drilling, 62; shut down, 43; total, 126.

EAST TEXAS FIELDS

County—	Comp.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	1	1	0	0	0	0
Anderson	0	0	0	0	1	1
Cherokee	0	0	0	0	3	3
Falls	0	0	0	0	1	1
Franklin	0	0	0	0	1	1
Freestone	0	0	0	0	3	3
Hopkins	0	0	0	0	1	1
Limestone	0	0	0	0	10	10
Navarro	0	0	0	0	4	4
VanZandt	0	0	0	0	1	1
Total March	1	1	0	0	25	25
Total February	9	9	0	0	22	22
Difference	8	8	0	0	3	3

WOOD COUNTY
WELLS COMPLETED
Consumers L. & C. Co., Everett & Co. 1 dry

Wells completed 1
Dry 1

ANDERSON COUNTY
Wells Drilling
Southern Pines Lumber Co., Humble O. & R. 2.

CHEROKEE COUNTY
Elliott & Clark, Humble O. & R. 1 (oil sand).
Hill, Nicolle and wife 1.
Sumner, Magnolia Pet. 1.
Note.—Humble Oil & Refining Co.'s No. 1 Elliott & Clarke is an oil well, but had not been tested for its full potential flow, up to close of this report.

FALLS COUNTY
Wilson, Callahan et al 1.

FRANKLIN COUNTY
Gandy, Trout et al 1.

FREESTONE COUNTY
Pickens, Kechi Pet. 1*.
Woods, Cosden & Co.
Colman, Orbit Oil Co. 1.

HOPKINS COUNTY
Jackson & Maloney, Amerada Pet. 1.

LIMESTONE COUNTY
Dies, C. W. Green et al 1.
Stuberanch, Smith et al 1.
Maddox, Zoch et al 1.
Sharp, Liles et al 1.
Brown, McCarty et al 1.
Richardson, Transcontinental Oil 1.
Strother, Liles et al 1.
Bassett, Pandem Oil 1.
Fanner, Diller & Hammond 1.
Jones, Dillen & Hammond 1.

NAVARRO COUNTY
Chaney, The Texas Company 1.
Swink, Sun Oil Co. 1.
Stubbs, Reiter et al 1.
Marshall, Magnolia Pet. 1.

VAN ZANDT COUNTY
Foster, Cranfill Bros. 1.
Rigs, 0; wells drilling, 25; total, 25.

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Mirando	25	440	6	8	16	58	74
Rockdale-Minerva	6	160	1	0	3	13	16
Luling	5	264	0	1	5	7	12
Kingsville	1	0	0	1	2	5	7
Refugio	2	0	0	2	0	5	5
Adams Field	5	0	0	5	0	1	1
Miscellaneous	40	37	29	5	15	72	87
Total Mar.	87	901	36	22	41	161	202
Total Feb.	89	1,875	27	25	35	160	195
Difference	2	974	9	3	6	1	7

WELLS COMPLETED
MIRANDO DISTRICT

Cole Field—Duval—
Cintex Pet. 1 ..... gas
Houston Oil-Sun Oil 3 "B" ..... gas
Cole Pet. 27 ..... gas
Cole Pet. 28 ..... abd
Cole Pet. 32 ..... gas
Magnolia Pet. 1 ..... gas
Houston Oil-Tyng 2 R ..... gas
—O'Hern & Seacord—
O'Hern & Seacord 2 ..... abd
Piedras Pintas—
Gulf Prod. 1 ..... abd
Henne, Winch & Fariss-K. & S.—Jim Hogg—
Magnolia Pet. 26 20
K. & S. Corp. 52 ..... gas
Magnolia Pet. 25 50
Alworth Field—
Magnolia Pet. 17 5
Randado Field—
Magnolia Pet. 16 50
Magnolia Pet. 19 25
Magnolia Pet. 18 40
Grayburg Oil 15 20
Miranda Valley—Webb—
Crown Central 10 ..... abd
R. F. Duggan 1 ..... abd
Magnolia Pet. 7 25
Crown Central 15 70
Aviator or Bruni Tracts—
Sun Oil 13 110
Americas Field—
Killam-Maddox 1 ..... gas
Carolina-Texas—
Hazlitt-Simmons 1 ..... abd
Straight Eight Field—
Edward St. Albans 1 25

Wells completed 25
Gassers completed 8
Production 440
Dry and salt water 6
Gas production 410,000,000

ROCKDALE-MINERVA
Carl Fogle-Watson 1 ..... abd
Groneman Brothers-Chandler 1 20
Rockdale Development-Lorenz 3 20
Chicago Oil & Land-Gambill 2 20
Fritz Fuch-Lon Hudson 1 50
Coffield-Hale-Smith 2 50

Wells completed 6
Production 160
Dry and abandoned 1

LULING
Magnolia Petroleum-Mercer 13 ..... gas
Magnolia Petroleum-Mercer 12 50
Magnolia Petroleum-Marines 23 25
Magnolia Petroleum-Shanklin 7 40
Magnolia Petroleum-Allen 42 35
Magnolia Petroleum-Baker 38 9
Magnolia Peroleum-Mercer 16 80
Magnolia Petroleum-Branyon 4 25

Wells completed 8
Production 264
Gas production 3,000,000
Dry and abandoned 0

REFUGIO
Houston Gulf Gas-Lambert 2 ..... gas
Houston Oil-Heard 9 ..... gas

Wells completed 2
Wells abandoned 0
Gas production 60,000,000

ADAMS GAS—MEDINA
Western Gas & Fuel-Adams 3 ..... gas
Henderson & Holden-Adams 7 ..... gas
Witherspoon Oil-Franklin 2 ..... gas
Western Gas & Fuel-Adams 4 ..... gas
Western Gas & Fuel-Adams 6 ..... gas

Wells completed 5
Wells abandoned 0
Gas production 88,000,000

KINGSVILLE—KLEBERG
Humble Oil & Refining-Flato Clark 3 ..... gas

Wells completed 1
Wells abandoned 0
Gas production 88,000,000

MISCELLANEOUS
Atascosa County—
Helvetia Oil-Weimers 16 8
Frontier Oil-Foster 8 4
Bastop County—
Johnson Bros.-Trigg 3 ..... abd
Bexar County—
Associated Oil-Caruthers 11 8
Schimmell Pet.-Limon 4 5
Schimmell Pet.-Limon 3 4
Hamilton Land-Fee 17 ..... abd
A. R. Beall-Ackerman 1 ..... abd
Caldwell County—
John Storey-Jeffreys 1 ..... abd
Gonzales County—
John Hoosier-Baker 1 ..... abd
Guadalupe County—
J. M. Davis-Weinert 1 ..... abd
LaSalle County—
DeLange, Eiser-Fee 1 ..... abd
Live Oak County—
W. G. Clark-Adair 1 ..... abd
Henderson Coquat-Sartain 5 ..... gas
Houston Oil-Brown 1 ..... gas
Medina County—
Ina Oil-Fingers 1 ..... abd
Arnett Oil-Nixon 5 ..... abd
Witherspoon-Redus 1 ..... abd
Ralph Lewis-Keller 1 ..... abd
McMullen County—
Arkansas Natural Gas-Franklin No. 2 ..... abd
F. J. Darlington-Farmers Life No. 1 8
Nueces County—
W. L. Pearson No. 2 ..... gas
San Patricio County—
W. L. Pearson-Rachal 3 ..... gas
Ed. Leach-Freeman 1 ..... abd
Starr County—
Simms-Magnolia-Salinas 1 ..... abd
Deckle-McCarley-Garcia 1 ..... abd
Milham Corp.-Salinas 1 ..... abd
Williamson County—
The Texas Company 1 ..... abd
Zapata County—
The Texas Company-Jennings 4 ..... gas
Duval County—
Hoffer-Smith-King 1 ..... abd
Humble-Becker 1 ..... abd
Humble-Singer 11 ..... abd
Humble-Reiter-Foster-Kohler 3 ..... abd
Jim Hogg County—
Magnolia Petroleum-Martinez 21 ..... abd
Killam-Lang-Lopez 1 ..... abd
Webb County—
Henne, Winch, Killam-Billings 1 ..... abd
Cresswell-Fallin-Gates 1 ..... abd
Alexander-Moglia 1 ..... abd
Ellis-Benavides 1 R ..... abd
R. V. Hill-Martinez 2 ..... abd

Wells completed 40
Gassers completed 5
Gas production 165,000,000
Oil production 37
Dry and abandoned 29

ATASCOSA COUNTY
Rig
Carruthers, Grayburg Oil 27.
Well Drilling
Hartung, Grayburg Oil B-21.
Rigs, 1; well drilling, 1; total, 2.

BEXAR COUNTY
Rig
San Antonio Trust, Marland Oil 1.
Well Drilling
Ackerman, A. R. Beall A-1.
Rigs, 1; well drilling, 1; total, 2.

BASTROP COUNTY
Well Drilling
Nauman, Neal A. Nelson 1.
Well drilling, 1; total, 1.

BEE COUNTY
Well Drilling
Hicks, Nichols & White 1.
Well drilling 1; total, 1.

BREWSTER COUNTY
Well Drilling
Wilson, Green Valley Oil 3.
Well drilling, 1; total, 1.

BURLESON COUNTY
Rig
————, Edge-Harris-Davis 1.
Wells Drilling
Bowers, E. F. Gordon 2.
Hillard-Lewis, Caldwell-Oliphant 3.
Geissenchiog, Caldwell-Oliphant 1.
Rigs, 1; wells drilling, 3; total, 4.

CALDWELL COUNTY
Rigs
Trammell, Magnolia Petroleum 18.
Proctor, Magnolia Petroleum 14.
Goertz, The Texas Company 1.
Wells Drilling
Kelly, North & South 1.
Tiller, North & South 1.
Moore, Magnolia Petroleum 20.
Tabor, Magnolia Petroleum 27.
Mercer, Magnolia Petroleum 17.
Shubert, Magnolia Petroleum 15.
Ellison, Fred Adams 1.
Robert Carter, Sutton & Smith 2.
Lawler, L. I. Dodwell 1.
Carter, Flynne Brothers 1.
Rigs, 3; wells drilling, 10; total, 13.

DEWITT COUNTY
Rigs
————, Yoro Development 2.
Gohmert-Louis-Louis P. Schawe 1.
Wells Drilling
Kaiser, McNeil & Matthews 1.
Smith, Empire Southern 1.
Rigs, 2; wells drilling, 2; total, 4.

DIMMITT COUNTY
Well Drilling
City Natl. Bank, Humble Oil & Ref. 1.
Well drilling 1; total, 1.

FRIO COUNTY
Well Drilling
Blackaller, P. A. Neilan 1.

FAYETTE COUNTY
Wells Drilling
Marquardt, LaFayette Oil 1.
Rosa Russek, Geo. W. Zeigin 1.
Wells drilling, 2; total, 2.

GONZALES COUNTY
Rig
Billings, Kercheval Production 2.
Wells Drilling
Denman, Bristol Oil & Gas 2.
Preston, Martin Oil & Dev. 1.
Elder, E. Lee Moore 1.
Vaughan, Joe Bruner 1.
Lamkin, C. A. Campen 1.
Rigs, 1; wells drilling, 5; total, 6.

GUADALUPE COUNTY
Rigs
Roberts, Magnolia Petroleum 6.
Carter, Magnolia Petroleum 3.
Wells Drilling
Angelke, F. G. Blumbergs 1.
Dale, Pat Armstrong 1.
Weinert, F. A. Lain 1.
Rigs, 2; drilling, 3; total, 5.

HAYS COUNTY
Well Drilling
Hohenburg, J. E. Rodgers 1.
Well drilling, 1; total, 1.

KARNES COUNTY
Wells Drilling
Butler, Earl B. Reynolds 2.
Szalwinski, Alamo Drilling & Leasing 1.
Wells drilling, 2; total, 2.

KERR COUNTY
Well Drilling
Leigh, Walker-Van Duyn 1.
Well drilling, 1; total, 1.

KINNEY COUNTY
Rig
Jim Clamp, W. A. Stephens 1.
Well Drilling
————, Havelin Oil 1.
Rigs, 1; well drilling, 1; total, 1.

KLEBERG COUNTY
Rigs
Dennett, Humble Oil & Ref. A-3.
Kivlin, Humble Oil & Ref. 1.
Wells Drilling
Kivlin, A. C. Erwin 1.
Dennett, Humble Oil & Ref. B-1.
Flato, Carter-Walsh 1.
Kleberg Trustee, Humble Oil & Ref. 3.
Kleberg Trustee, Humble Oil & Ref. 1.
Rigs, 2; wells drilling, 5; total, 7.

LAMPASAS COUNTY
Rig
Bunch Ranch-Davis-Bullock 1.
Well Drilling
Faught-Smith-Landers-Faught 1.
Rigs, 1; well drilling, 1; total, 2.

LAVACA COUNTY
Well Drilling
Steinman, Steinman Brothers 2.
Well drilling 1; total, 1.

LEE COUNTY
Wells Drilling
Wachemann, Plunkett-Edwards 1.
————, Ricketts 1.
Wells drilling, 2; total, 2.

LIVE OAK COUNTY
Rig
Cartwright, Houston Oil 17.
Wells Drilling
Dunning, Houston Oil 1.
Sellers, Houston Oil 1.
Roberts, J. W. Walton 1.
Rigs, 1; wells drilling, 3; total, 4.

MEDINA COUNTY
Rigs
Redus, Witherspoon Oil 2.
Nixon, Witherspoon Oil 1.
Wells Drilling
Adams, Western Gas & Fuel 4.
Chandler, Yantis 1.
Nixon, R. P. O'Brien 1.
Fohn, F. L. Williams 1.
Taylor, Medina Oil 10, 1, 11.
Mumme, Johnson 1.
Mann, J. H. Gray 1.
Oeffingers, J. A. Swayze 1.
Fingers, Ina Oil 2.
Zerr, Cecil Switzer 1.
Berger, Wheless-Peters 1.
Lacey, Pat Armstrong 1.
Long, Pat Armstrong 1.
Eaton, J. E. Walsh 1.
Carpenter, Gibson Oil 1.
Rothe, California-Medina 1.
Rigs, 2; wells drilling 18; total, 20.

MAVERICK COUNTY
Wells Drilling
Indio, Ryan Consolidated 1.
————, Hume-Lindenborne 1.
Whipff, Johnson & Hout 1.
Chittim, Ryeade Oil 1.
Sullivan, Ryeade Oil 2.
Wells drilling, 5; total, 5.

MILAM COUNTY
Rigs
Baldridge, Noack & Laning 8, 9.
————, Cranfil & Reynolds 1.
Wells Drilling
————, Noack & Laning 1.
Hicks, Coffield-Hale 2, 1.
Smith, Noack Oil 3, 4.
Gohman, W. T. Ramsel Oil 3.
Hudson, Fritz Fuch 2.
Hudson, Rockdale Oil 1.
Luetge, R. T. Clifton 1.
Fowler, Baggett Brothers 1.
Coulter, Clear Lake Oil 1.
Bartlett, Kent-Middleton 1.
Marshall, Noack & McCormick.
Rigs, 3; wells drilling, 13; total, 16.

MENARD COUNTY
Wells Drilling
Kothamn, Clark 1.
White, Elliott-Lewis 1.
Wells drilling, 2; total, 2.

M'MULLEN COUNTY
Wells Drilling
Jacobs-Geo. Pickett 1.
Washburn-Sun Oil 1.
Franklin, Dodson 1.
Jacobs, Houston Gulf Gas 5.
Shiner, George Pope 4.
Kuykendall, George M. Ball 1.
Wells drilling, 6; total, 6.

NUECES COUNTY
Well Drilling
John Dunn, Pearson —.
Well drilling, 1; total, 1.

REFUGIO COUNTY
Wells Drilling
Heard, Houston Gulf Gas 3.
Fox, Houston Gulf Gas 3.
Moody, Houston Gulf Gas 2.
Shelly, Wm. F. Morgan 1.
Rogers, Wm. F. Morgan 1.
Wells drilling, 5; total, 5.

SAN PATRICIO COUNTY
Rigs
Wilson, F. S. Smiley.
McCampbell, John Sigmund 7.
Wells Drilling
Cage, W. L. Pearson 4, 5.
Mathis-Huber-Crawford 1.
Rigs, 2; wells drilling 2; total, 4.

SUTTON COUNTY
Well Drilling
Ross, National Potash Co. 1.
Well drilling, 1; total, 1.

WILSON COUNTY
Wells Drilling
Haese, Thomas et al 1.
Espey, Gibson Oil 1.
Wells drilling, 2; total, 2.

MIRANDO DISTRICT
Rigs
Cole-Benavides, Cole Petroleum 35, 37, 38, 40.
Benavides, Houston Oil 7.
Survey 395, Duval, Kohler, Huble-Reiter-Foster 3.
Survey 102, Welder-Wood, Humble Oil & Ref. 2.
Randada, Merchants State Bank, Magnolia Petroleum 21.
Alworth, Merchants State Bank, Magnolia Petroleum 22.
Schott-Garcia-Jones et al 3.
Albercas-Bruni, O. W. Killam 1.
Aviator-Puig-Ball et al 1.
Puig, Ray Wood 1.
Carolina-Texas-de la Garza-Hamilton-Warner 1.
Leaseholders-Peal, Cintex Petroleum 1.
Zapata-Martinez, Buffalo Erie Syndicate 3.
Wells Drilling
Cole-Benavides, Cole Petroleum 23, 33, 34, 36, 39.
King-Harper, Barkley-Meadows-Morgan-Gulf 3.
Benavides, Houston Oil-Sun 1-A.
Benavides, Houston Oil-Claggett 1-S.
Willmann, Cintex Petroleum 2.
O'Hern & Seacord-Benavides, Magnolia Petroleum 1.
Benavides, Buffam 1.
Benavides, O'Hern & Seacord 1.
Bruni, O. W. Killam 1.
Benavides, Moody Oil 1.
Piedras Pintas-Walsh, Humble Oil & Ref. 1.
Survey 4, Margarite, Ralston M. Talbott 1
Singer, Humble Oil & Ref. 12.
Survey 120, Dilworth, Humble Oil & Ref. 2.
Survey 400, Kohler, Humble-Reiter-Foster 4.
Survey 76, Hahl, Schlesinger 1.
Survey 51, Hahl, Magnolia Petroleum 1.
Randado-Well, Grayburg Oil 16, 17.
Merchants State Bank, Magnolia Petroleum 20.
Palacious, Livingston-Ritchson 1.
de la Garza, Magnolia Petroleum 20.

Henne, Winch & Fariss-Martinez, Magnolia Petroleum 34, 35.
K. & S.-Lopez, Edward St. Albans 5, 6.
Holbien, K. & S. Corp. 57.
Martinez, Associated Oil 3.
Holbien, Edward St. Albans 1.
Alworth-Merchants State Bank, Magnolia Petroleum 19.
Garza, Alworth Brothers 3.
Block 136, Holden et al, Jones 3.
Block 144, Holbien, Hamilton et al 1.
Schott-Garcai, Magnolia Petroleum 6.
Aviator-Puig, George Ball 4.
Puig, O. W. Killam 1.
Puig, Edward St. Albans 2.
Puig, Suladie Drilling 1.
Bruni, Crown Central 21.
Bruni, H. E. Neal 1.
Bruni, Sun Oil 14.
Mirando Valley-Anderson, Johnson 1.
Garcia, Cornhuskers Oil 6.
Carolina-Texas-Webster, Associated Oil B-3.
Vela, M. & N. Drilling 1.
Webster, Daniel & Best 1.
de la Garza, T. P. Morgan 1.
de la Garza, Barnsley-Chicago 1.
de la Garza, Mims & Putman 1.
Survey 1,570, Kruger, W. O. Wheatley 2.
Santo Tomas tract-Urbahn, Rio Grande Oil 1.
Survey 736, Garcia, Rawlins & Pelton 1.
Survey 43, Billings, O. W. Killam 1.
Zapata-Slator, Mission Oil 1.
Martinez, Harling Oil & Gas 5.
Rigs, 16; wells drilling, 58; total, 74.

GULF COAST

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Boling	0	0	0	0	5	5	5
Batson	5	25	3	0	1	6	7
Blue Ridge	4	2,400	1	0	4	8	12
Big Creek	2	4,200	0	0	2	5	7
Barber Hill	2	1,600	0	0	0	3	3
Edgerly (La.)	0	0	0	0	0	4	4
Goose Creek	9	570	4	0	1	9	10
Humble	3	0	3	0	0	5	5
Hull	9	775	5	0	2	11	13
High Island	0	0	0	0	0	5	5
Jennings (La.)	0	0	0	0	0	3	3
Lockport (La.)	3	2,400	0	0	3	8	11
Markham	3	300	1	0	0	3	3
Nash	0	0	0	0	1	5	6
Orange	5	410	1	0	2	9	11
Orchard	0	0	0	0	0	2	2
Pierce Jct.	7	8,540	0	1	3	11	14
Piedras Pintas	0	0	0	0	0	3	3
Spindletop	12	25,160	1	0	10	42	52
Saratoga	3	14	1	0	1	3	4
Sour Lake	4	300	0	0	1	1	2
Stark (La.)	0	0	0	0	0	2	2
South Liberty	1	100	0	0	0	8	8
Vinton (La.)	7	210	3	0	3	7	10
West Columbia	1	10	0	0	1	2	3
Miscellaneous	20	0	18	2	23	63	86
Total Mar.	100	47,014	41	3	58	233	291
Total Feb.	118	58,200	46	1	67	176	243
Difference	18	11,186	5	2	9	57	48

WELLS COMPLETED

BATSON

Wing, Gulf Prod. 170 ..... ald
Crawford, East Batson Oil 1 10
Cruse, Gulf Prod. 2 ..... abd
Colo. Deutser Oil 1 ..... sw
Heywood, Parraffine Oil 34 15

Wells completed 5
Production 25
Abandoned and salt water 3

BLUE RIDGE

West-Schenck, Gulf Prod. 8 500
West-Schenck, Humphrey Corp. 2 ..... abd
West-Schenck, Gulf Prod. 9 400
Robinson, Navarro Oil 2-A 500

Wells completed 4
Production 1400
Abandoned 1

BIG CREEK

Davis, Gulf Prod. 38 4000
Davis, Gulf Prod. 39 200

Wells completed 2
Production 4200

BARBER HILL

Kirby, Humphrey Corp. 2-B (dpnd) .. 400
Fee, Bennett-Moody Corp. 5 1200

Wells completed 2
Production 1600

GOOSE CREEK

Galliard, Gulf Coast Oil 11 (wo) 20
Scorrgea, M. & B. Oil 3 ..... abd
Smith, Gulf Prod. 26 15
Peninsula, Humble Oil & Ref. 31 .... dry
Peninsula, Humble Oil & Refg. 32 .... sw
Beaumont, Gulf Prod. 32 150
Chapman-Bryan, Gulf Prod. 13 350
Peninsula, Humble Oil & Refg. 17 .. sw
Galliard, Gulf Coast Oil 23 35

Wells completed 9
Production 570
Abandoned and salt water 4

HUMBLE

Bender, Sun Co. 4 ..... sw
Hirsch, Beneduum & Trees 1 ..... sw
Wheeler, Barclay & Martin 1 ..... abd

Wells completed and abandoned .. 3

HULL

Merchant, The Texas Company 1 ..... abd
Dolbear, Republic Prod. 10 (wo) 500
Dolbear, Republic Prod. 17 (wo) 100
Rivere, W. B. Flynn 2 ..... atd
Hannah, The Texas Company 2 ..... sw
Phoenix, Gulf Prod. 15 (wo) 100
Dolbear, Republic Prod. 15 (wo) 75
Merchant, Humble Oil & Refg. 1 ..... sw
Harrison, Hull Oil 2 ..... sw

Wells completed 9
Production 775
Abandoned and salt water 5

MARKHAM

Kounts, Rycade Pet. 3 200
Gray, Rycade Pet. 3 ..... dry
Clem, Powers Prod.-Houston Gulf 1 .. 100

Wells completed 3
Production 309
Dry 1

ORANGE

Carbello, Rex Pet. 12 145
Chesson, Orange Pet. 8 (wo) 20
State land, Tillery Oil 2 125
Leon, Gulf Coast Oil 5 ..... sw
Winifree, Humble Oil & Refg. 6 120

Wells completed 5
Production 410
Salt water 1

PIERCE JUNCTION

Settegast, Rio Bravo Oil 3 3600
Settgast, W. F. Martin et al 1 ..... gas
Bender, Rio Bravo Oil 4 3100
Cain, Navarro Oil 2 (wo) 15
Taylor, Gulf Prod. 20 125
Jones, Gulf Prod 2 1500
Parsons, Smith et al 1 200

Wells completed 7
Production 8540
Gas 1

LOCKPORT

Miller, Vacuum-Gulf 9 1000
Miller, Vacuum-Gulf 13 1200
Farquhar, Vacuum-Gulf 4-A 200

Wells completed 3
Production 2400

SPINDLETOP

Jack & Duff, Gulf Prod. 2 (dpnd) ...1500
McFaddin, Yount Lee Oil 18 2500
T. & N. O., Rio Bravo Oil 58 3500
Fee, Yount Lee Oil 23 2000
Gladys, Yount Lee Oil 21 3200
Fee, Yount Lee Oil 22 960
McLean, Atlantic Oil Prod. 3 (wo) ... sw
Mann, Gulf Prod. 5 (wo) 150
T. & N. O., Rio Bravo Oil 5 (wo) ... 850
Gladys, Yount Lee Oil 20 3500
McFaddin, Yount Lee Oil 25 3000
Gladys, Yount Lee Oil 23 4000

Wells completrd 12
Production 25160
Salt water 1

SARATOGA

Kirby, Cotton Oil 5 ..... sw
Brooker, Skinner Oil 2 8
Texas, Sun Co. 173 6

Wells completed 3
Production 14
Salt water 1

SOUR LAKE

Fee, Minor Oil 80 10
Thomson, Gulf Prod. 2 75
Jackson, Gulf Prod. 5 30
Carpenter, Sun Co. 1 185

Wells completed 4
Production 300

SOUTH LIBERTY

Staiti, The Texas Company 6 100

Wells completed 1
Production 100

VINTON

Gray, The Texas Company 27 ..... abd
Rescue, Vinton Pet. 6 40
Star, Gulf Ref. 41 ..... abd
G. N. G., Gulf Ref. 67 100
Vincent, Edgerly Pet. 7 (wo) 10
Vincent, The Texas Company 18 ..... sw
Parks, Wilson & Broach 12 60

Wells completed 17
Production 210
Abandoned and salt water 3

WEST COLUMBIA

Eyres, Gulf Prod. 9 (wo) 10

Wells completed 1
Production 10

MISCELLANEOUS

Austin County—Racoon Bend—

Austin, Humble Oil & Ref. 1 ..... abd
Bellville, Humble Oil & Ref. 1 ..... dry
Thompson, Humble Oil & Ref. 2 ..... gas
Reese, Humble Oil & Ref. 2 ..... gas

Brazoria County—

Allen Dome: San Bernard, Roxana Pet. 1 ..... abd
Stratton Ridge: Perry, Gulf Prod. 1. .. abd
Danbury: Sweeney, The Texas Company 1 ..... abd
Pledger-Hunt, The Texas Company 1 .. abd

Liberty County—

Moss Bluff Dome: Kyle, Union Sulphur 4 ..... abd

Fort Bend County—

Long Point Dome: Davis, Gulf Prod. 22 abd
Davis, Gulf Prod. 23 ..... abd
Beard, Gulf Prod. 3 ..... abd
Trone, Gulf Prod. 1 ..... abd

Jefferson County—

Edwards, Miller Drlg. Co. 1 ..... abd

Matagorda County—

Hawkins Dome: Sanborn, Gulf Prod. 2. abd

COASTAL LOUISIANA

Assumption Parish—

Clifton, Union Sulphur Co. 2 ..... abd

Cameron Parish—

Hackberry Dome: Gulf land, Union Sulphur 1 ..... abd
Bell, Union Sulphur 1 ..... abd
Vincent, Union Sulphur 1 ..... abd

Calcasieu Parish—

Muir, Calcasieu Oil 1 ..... abd

Wells completed 20
Gas 2
Abandoned 18

RIGS AND WELLS DRILLING

BOLING

Rig

Carson, Boling Oil 2.

Wells Drilling

Farmer, The Texas Company 2.
Farmer, Sun Co. 2.
Bay, Weed & Gayle 7.
Keler, Vacuum Oil 5 (sd).
Bay, Vacuum Oil 5 (sd).
Rigs, 1; wells drilling, 5; total, 6.

BATSON

Rig

Hooks, Sterling Oil 6.

Wells Drilling

Hodges, Kirby-Capitol Oil 7.
La Jarza, The Texas Company 3.
Colorado, East Batson Oil 8.
Counselman, Deutser Oil 7.
Choate, Gulf Prod. 69.
Milhome, S. R. Buchanan 92.
Rigs, 1; wells drilling, 6; total, 7.

BLUE RIDGE

Rigs

Robinson, Navarro Oil 2-B.
West-Schenck, Abercrombie Oil 3.
West-Schenck, Gulf Prod. 10.
Luscher, Gulf Prod. 10.

Wells Drilling

Blakely, Overly Prod. 1.
Robinson, Navarro Oil 1-B.
Robinson, Abercrombie Oil 1-B.
West-Schenck, Abercrombie Oil 9.
West-Schenck, Humphreys Corp. 9.
Adams, Woodruff et al 1.
Blakely, Gulf Prod. 9-B, 15-C.
Rigs, 4; wells drilling, 8; total, 12.

BIG CREEK

Rigs

Davis, Gulf Prod. 40.
Fee, The Texas Company 4.

Wells Drilling

Fee, The Texas Company 3.
Davis, Gulf Prod. 22 (dpng.)
J. H. P. Davis, Gulf Prod. 1, 1-A.
Hausler, Gulf Prod. 2.
Rigs, 2; wells drilling, 5; total, 7.

BARBER HILL

Wells Drilling

Japhet, Bennett & Moody Corp. 8.
Kirby, Humphreys Corp. 4-B, 5.
Wells drilling, 3.

EDGERLY

Wells Drilling

Bright-Penn, Gulf Ref. 41.
Hunter, Rex Pet. 5.
Parraffine, Hercules Oil 1.
Lilliard, C. M. Crotty 12.
Wells drilling, 4.

GOOSE CREEK

Rig

Busch, Wilson et al 7.

Wells Drilling

Smith, Humble Oil & Ref. 53, 70.
Peninsula, Humble Oil & Ref. 32.
Beaumont, Humble Oil & Ref. 10.
Galliard, Gulf Coast Oil 16.
Scorrgea, M. & B. Oil 6.
Duke, Lake Shore Oil 3.
Smith, Gulf Prod. 7.
Beaumont, Gulf Prod. 24.
Rigs, 1; wells drilling, 9; total, 10.

HUMBLE

B. & G., Atlantic O. P. 1.
Burt, Barclay & Meadors 4.
Hirach, Benedum & Trees 1.
West, The Texas Company 22.
Chow, Webb Oil 22.
Wells drilling, 5.

HIGH ISLAND

Wells Drilling

Smith, Gulf Prod. 3, 7.
Cade, Sun Co. 9, 11.
Lockhart, Sun Co. 12.
Wells drilling, 5.

HULL

Rigs

Hannah, Texas-Vacuum Oil 7.
Thomas, Gulf Prod. 11.

Wells Drilling

Phoenix, Gulf Prod. 83, 84, 85.
J. C. Baldwin, Gulf Prod. 19.
Harrison, Hull Oil 2.
Barngrover, Empire Gas & Fuel 24.
Taylor, Mecom Oil 2.
Dolbear, Republic Prod. 32, 35.
Merchant, Humble Oil & Ref. 1 (wo).
Hannah, The Texas Company 2.
Rigs, 2; wells drilling, 11; total, 13.

JENNINGS

Latrielle, The Texas Company 45, 101.
Latrielle, Jennings Oil 5.
Wells drilling, 3.

LOCKPORT

Rigs

Bayou D' Inde, Vacuum-Gulf 3.
Miller, Vacuum-Gulf 15, 16.

Wells Drilling

Miller, Vacuum-Gulf 7, 8, 14.
Farquhar, Vacuum-Gulf 1, 4-A, 5-A.
Friedberg & Wolf, Vacuum-Gulf 2.
Bordages, Vacuum-Gulf 2, 4.
Rigs, 3; wells drilling, 8; total, 11.

MARKHAM

Wells Drilling

Myers, Powers Prod.-Moody Corp. 3.
Myers, Rycade Pet. 3.
Kountz, Rycade Pet. 4 (sd).
Wells drilling, 3.

NASH DOME

Rig

Fitch, Rycade Pet. 5.

Wells Drilling

Nash, Rycade Pet. 9, 10.
Wisdom, Rycade Pet. 12, 14.
Szerberg, Rycade Pet. 1.
Rigs, 1; wells drilling, 5; total, 6.

ORANGE

Rigs

Peveto, Gulf Prod. 11.
Carbello, Rex Pet. 14.

Wells Drilling

Cow Bayou, Tillery Oil 2.
Cow Bayou, Brownie Babbittee Oil 2.
Carbello, Rex. Pet. 13.
Cow Bayou, Rycade Pet. 2-B.
Moore, Staintic O. P. 2.
Leon, Gulf Coast Oil 5.
Granger, Gulf Prod. 3.
Chesson, Texhoma Oil 16.
Rigs, 2; wells drilling, 9; total, 11.

ORCHARD

Wells Drilling

Moore, Gulf Prod. 4, 5.
Wells drilling, 2.

PIERCE JUNCTION

Rigs

Liggett, Humphreys Corp. 2.
Bullock-Nash, Eunice & Carpenter 2.
Humble, Navarro Oil 2.

Wells Drilling

Howe, H. R. Cullem 8 (dpng.).
Jones, M. Kouri 2.
Prudential, Marland Oil 4.
Fee, Rio Bravo Oil 2, 3.
Settegast, Rio Bravo Oil 2, 3.
Dooley, Texas Exploration 10.
Jones, Gulf Prod. 2.
Sanders, Gulf Prod. 1.
Bencer, J. F. Bashara 2 (dpng.).
Rigs, 3; wells drilling, 11; total, 14.

PIEDRAS PINTAS

Wells Drilling

Walsh, Humble Oil & Ref. 1, 2.
———, Magnolia Pet. 1 (sd).
Wells drilling, 3.

SPINDLETOP

Rigs

McLean, Atlantic O. P. 14, 16, 17.
Gordon, Hines Oil 2.
McLean, Sun Oil Co. 10, 11.
Quinn, Plummer Oil 1.
Quinn, Walker Oil 1.
Gladys, Kinnear Oil 1.
McFaddin, Yount Lee Oil 29, 30.

Wells Drilling

McFaddin, Yount Lee Oil 24, 27, 28.
Fee, Yount Lee Oil 14, 24, 25.
Gladys, Yount Lee Oil 6, 9, 11, 17, 24, 25.
Trembly, Yount Lee Oil 4.
Davis, Yount Lee Oil 6.
McLean, Atlantic O. P. 1, 8, 10, 11.
Rush, Deep Sand Oil 1.
Parker, Hines Oil 2.
Gordon, Hines Oil 1.
Roberts, Hines Oil 2.
McLean, Sun Oil Co. 2, 3, 4, 9.
Price, Sun Co. 1, 2.
T. & N. O. Rio Bravo Oil 50, 101.
Weed, Turnbow Oil 1.
Banks, Turnbow Oil 1, 2.
Quinn, Walker Oil 2.
Fee, Magnolia Pet. 3, 4.
Gladys, Davis et al 1.
Weed, Gulf Prod 12-A.
Oakwood, Gulf Prod. 9, 10.
Mann, Gulf Prod. 4, 5.
Rigs, 16; wells drilling, 42; total, 52.

SARATOGA

Rig

Cotton, Rainbow Oil 1.

Wells Drilling

Pope-Ellis, Cotton Oil 2.
Texas Crude, Sun Co. 174.
Ogden, East Side Oil 1.
Rigs, 1; wells drilling, 3; total, 4.

SOUR LAKE

Rig

Homestake, The Texas Company 1.

Well Drilling

Ebberts, Gulf Prod. 4.
Rigs, 1; well drilling, 1; total, 2.

SOUTH LIBERTY

Wells Drilling

Harrison, Navarro Oil 10.
Simms, The Texas Company 4.
Staiti, The Texas Company 7.
Welder, Humble Oil & Ref. 7.
Hirsch, Associated Oil 1.
Marshall, Gulf Prod. 2.
Palmer, Gulf Prod. 1.
Bingle, Gulf Prod. 1.
Wells drilling, 8.

STARK (LA.)

Industrial Lumber, Gulf Ref. 5.
Lutcher-Moore, Gulf Ref. 5.
Wells drilling, 2.

VINTON

Rigs

Gray, Marrs McLean 5.
Vincent, Edgerly Pet. 12.
Vincent, Vinton Pet. 19.

Wells Drilling

Vincent, Vinton Pet. 18.
Gray, Marrs McLean 4.
Vincent, Edgerly Pet. 11, 12.
Johnson, La. and Colo. Oil 3.
Rescue, Vinton Pet. 6, 7.
Rigs, 3; wells drilling, 7; total, 10.

WEST COLUMBIA

Rig

Arnold, The Texas Company 23.

Wells Drilling

Hogg, The Texas Company 51.
Eyler, Gulf Prod. 4.
Rigs, 1; wells drilling, 2; total, 3.

MISCELLANEOUS

AUSTIN COUNTY

Rig

Racoon Bend Dome: Washington, Humble-Valley Oil 1.

Wells Drilling

Austin College, Humble-Valley Oil 2, 3.
Reese, Humble-Valley Oil 2.
Thompson, Humble-Valley Oil 2.
Bellville, Humble-Valley Oil 1.
Hickory Mound, R. E. Gravies 1.
Mewis, Green et al 1.
Rigs, 1; wells drilling, 7; total, 8.

ANGELINA COUNTY

Rig

Long Bell Lumber, Roxana Pet. 1.

Wells Drilling

Henderson, Humble Oil & Ref. 1 (sd).
Graham, Hendsen et al 1 (sd).

BRAZOS COUNTY

Wells Drilling

Iola, Rasmussen et al 1.
West of Bryan, Bryan Oil Co. 1.
Wells drilling, 2.

ROCKY MOUNTAIN AREA

WYOMING

Summary of Field Operations

Dist.—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy	4	53	1	0	0	3	3
Salt Creek	28	23,184	0	0	10	74	84
Lance Creek	0	0	0	0	0	1	1
Big Horn Basin	3	10	2	0	3	53	56
Lost Soldier & Carbon Co.	5	1,019	2	0	1	17	18
Rock River	1	0	1	0	0	7	7
Fremont Co.	2	700	1	0	1	22	23
Osage	0	0	0	0	2	3	5
Natrona Co.	0	0	0	0	0	5	5
Lincoln & Uintah Cos.	1	100	0	0	3	43	46
Baxter Basin	0	0	0	0	0	7	7
Miscellaneous	1	0	1	0	2	24	26
Total Mar.	45	25,066	8	0	22	259	281
Total Feb.	17	11,416	2	2	27	289	316
Difference	28	13,650	6	2	5	30	35

MONTANA

Summary of Field Operations

District—	Comp	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Kevin Sunburst	12	848	4	0	8	51	59
Cat Creek and Miscellaneous	0	0	0	0	3	76	79
Total Mar.	12	848	4	0	11	127	138
Total Feb.	14	192	6	1	12	131	144
Difference	2	656	2	1	2	4	6

COLORADO

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total March	9	712	2	0	7	92	99
Total Feb.	13	1,440	3	1	11	102	113
Difference	4	728	1	1	4	10	14

UTAH

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total March ..	0	0	0	0	3	38	41
Total Feb.	1	0	0	1	4	38	42
Difference...	1	0	0	1	1	0	1

NEW MEXICO

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total March ..	3	375	4	0	11	130	141
Total Feb.	3	335	1	0	13	136	151
Difference...	0	40	3	0	4	16	10

WYOMING

BIG MUDDY

Wells Drilling

8-33-76 Humphrey, Continental Oil Co. 44.
9-33-76 Humphrey, Continental Oil Co. 39.
9-33-76 Crary, Texas Prod. Co. 33.
Rigs, 0; wells drilling, 3; total, 3.

SALT CREEK

Rigs

17-39-78 SE Argo Oil Co. 1-A.
34-39-78 NW Mammoth Oil Co. 302.
34-39-78 NW Mammoth Oil Co. 305.
28-39-78 NW Mammoth Oil Co. 405.
28-39-78 NE Mammoth Oil Co. 406.
13-38-78 SW Teapot Oil Synd.
16-39-78 NE Nicholaysen et al.
10-38-78 NW Mammoth Oil Co. 302.
31-39-78 SE Teapot Dev. Co.
5-39-78 NW Carter Oil Co. 12-D.

Wells Drilling

11-39-78 NE Margalexon Oil Co. 1.
23-40-78 NW Wyoming Oil Fields 16.
23-40-78 SE Wyoming Oil Fields 36.
23-40-78 SE Wyoming Asso. 21.
26-40-78 SE Wyoming Asso. 34.
14-40-78 NE Midwest Oil Co. 16-A.
12-39-79 E½ Ohio Oil Co. 25.
26-40-79 NE Wyoming Asso. 20.
27-40-79 SE Midwest Oil Co. 36-L.
34-40-79 NE Midwest Oil Co. 1-L.
27-40-79 SE Midwest Oil Co. 24-L.
27-40-79 SE Midwest Oil Co. 13-L.
35-40-79 SW Midwest Oil Co. 6-A.
2-39-79 SE Sinclair Wyoming 16-A.
19-40-78 NW E. T. Williams 2-AS.
26-40-79 SW Wyoming Asso. 22-L.
26-40-79 NW Wyoming Asso. 18-L.
26-40-79 NW Wyoming Asso. 13-L.
26-40-79 SE Wyoming Asso. 21-L.
35-40-79 NE Midwest Oil Co. 18.
34-40-79 SE Wyoming Asso. 1-L.
35-40-79 NW Wyoming Asso. 31-L.
24-40-79 SW Wyoming Asso. 16.
26-40-79 NE Wyoming Asso. 28.
26-40-79 NW Wyoming Asso. 33.
24-40-79 NW Wyoming Asso. 24.
26-40-79 SW Midwest Oil Co. 4.
5-39-78 NW Western States O. & L. 29-A.
28-40-79 SW Jupiter Oil Co. 34-S.
24-40-79 NW Wyoming Asso. 19.
26-40-79 NE Wyoming Asso. 19-L.
35-40-79 NE Midwest Oil Co. 13-L.
10-39-79 NE Prairie Oil & Gas 4-A.
18-40-79 NW Prairie Oil & Gas 6-A.

Shut Down

7-39-78 SE Continental Oil Co. 8-A.
35-40-79 NW Wyoming Asso. 24-L.
26-40-79 NE Wyoming Asso. 16-L.
35-40-79 SW Midwest Oil Co. 6-L.
25-40-79 NE Wyoming Oil Fields 19-L.
26-40-79 NE Wyoming Asso. 4-L.
35-40-79 SW Midwest Oil Co. 31-L.
35-40-79 NE Midwest Oil Co. 16-L.
2-40-79 SW Midwest Oil Co. 18-L.
25-40-79 NW Midwest Oil Co. 31-L.
35-40-79 NE Midwest Oil Co. 16-L.
26-40-79 SE Midwest Oil Co. 1-L.
35-40-79 SW Midwest Oil Co. 31-L.
23-40-79 SW Midwest Oil Co. 1-L.
36-40-79 NE Wyoming Oil Fields 36-L.
26-40-79 NE Wyoming Oil Fields 22-L.
23-40-79 SE Wyoming Oil Fields 6-L.
24-40-79 SE Salt Creek Cons. 36-L.
26-40-79 NE Wyoming Asso. 31-L.
23-40-79 SE Midwest Oil Co. 16-L.
23-40-79 NW Wyoming Oil Fields 36-L.
2-38-78 SE Staley Foley Synd 16-A.
35-39-78 SW Staley Foley Syndi. 16-A.
26-40-79 SE Wyoming Asso. 22-L.
10-40-79 SE Empire State Oil Co. 25-A.
28-39-78 NE Mammoth Oil Co. 101.
29-39-78 NE Mammoth Oil Co. 108.
28-39-78 NE Mammoth Oil Co. 302.
28-39-78 NW Mammoth Oil Co. 205.
4-39-78 NE Mammoth Oil Co. 101.
22-39-79 NE Evans Oil Corp.
22-40-78 SW Jupiter Oil Co. 27-A.
3-39-79 NW Midwest Oil Co. 15-L.
27-40-79 NW Midwest Oil Co. 15-L.
24-40-79 SE Wyoming Oil Fields 4-L.
33-40-79 SW Midwest Oil Co. 34-L.
34-40-79 SW Continental Oil Co. 35-A.
22-40-79 SW Wyoming Asso. 19-L.
24-40-79 NW Wyoming Asso. 34-L.
23-40-79 SE Wyoming Asso. 33-L.
Rigs, 10; wells drilling, 74; total, 84.

LANCE CREEK

Wells Drilling

7-35-65 Thompson, Wyo. & Mont. Dev. Co. 1.
Rigs, 0; wells drilling, 1; total, 1.

BIG HORN BASIN

Rigs

5-47-90 Hetzler, Ohio Oil Co. 1.
13-46-89 Tensleep, Prod. & Ref. 1.
32-58-99 SW Local Oil Co.

Wells Drilling

22-47-101 Taylor, Union Oil Co.
9-51-101 Fred Ostland et al.
5-46-90 Nowood, Carter Oil Co. 1.
25-58-98 NW. V. M. Kirk.
7-51-101 Fred Ostland et al.
24-51-93 SE J. E. Scalon et al 1.
2-44-96 F. A. McPherson.
8-51-100 Sonners, Ohio Oil Co. 3.
15-55-97 Lot 43, Standard of California.
31-48-90 Tensleep, Ohio Oil Co. 3.
11-40-90 Garry Oil & Dev. Co.
15-49-91 Shaffer & Tilley.
18-46-92 Washakie, Ohio Oil Co. 4.
20-52-101 Washington Oil & Gas.
14-47-102 Big Horn Dev. Co.
21-53-101 Taylor Brothers.
5-51-97 SW C. M. Carroll et al.
9-54-95 SW Wisconsin Hines Co.
15-44-92 SW F. L. Pierce.
-56-98 Elk Buttes Oil & Gas.
34-43-9- SE Union Oil Co. 1-A.
28-43-91 NW Union Oil Co. 1-A.
33-43-94 SW Wyoming Montana Oil.
17-46-98 Washakie, Ohio Oil Co.
8-43-91 Murphy Dome, Prod. & Ref. 1.
33-56-98 Cross Gas, Ohio Oil Co. 2.

Shut Down

8-51-100 Sonners, Ohio Oil Co. 4.
35-47-97 NE American Indian Oil 1.
3-55-98 Brown, Allen Oil Co. 2.
24-56-98 Garland, Prod. & Ref. 2.
13-46-98 Clark, Jess Crosby.
17-46-98 Dickerson, Tumador Oil Co.
25-58-99 Govt. land, Summit Oil Co.
7-51-101 Fred Ostland et al.
36-43-91 State, Utah Oil Ref. Co. 2.
5-42-90 Avery, Utah Oil Ref. Co.
26-43-91 Ft. Collins, Utah Oil Ref. Co.
35-43-91 Weller, Utah Oil Ref. Co. 2.
28-44-93 West Zimmerman Butte O. & G.
35-43-91 State, Utah Oil Ref. Co. 3.
29-56-97 SW Utah Southern Oil Co. 1.
29-56-97 NE Utah Southern Oil Co. 2.
2-47-100 Midwest Ref. Co.
4-91-100 Florence Oil Co.
3-55-97 Griffin, Allen Oil Co.
8-46-98 Big Horn Dev. Co.
10-54-95 SE Westlend Oil Co.
35-55-95 Westlend Oil Co.
11-49-102 Omar Oil Co.
19-51-92 Torchlight Oil Corp.
5-54-95 SW Royal Oil & Ref Co.
8-46-98 Grass Creek Producers.
34-43-92 C. D. Markham et al.
Rigs, 3; wells drilling, 53; total, 56.

LOST SOLDIER

Rig

12-19-87 Marland Oil Co.

Wells Drilling

10-26-90 Prairie Oil & Gas 61-A.
7-26-89 Prod. & Ref. 5.
2-26-90 Utah Oil Ref. Co. 7-A.
8-26-89 H. P. Nutting.
34-26-88 Prairie Oil & Gas 3-C.
29-26-87 Prod. & Ref. 3.
11-26-90 Wyo.-Ill., Prod. & Ref. 9.

Shut Down

25-26-87 Ferris, Prod. & Ref. 19.
34-29-90 A. A. Akers.
28-21-86 Greenville, Prod. & Ref. 1
3-26-90 Sand Hills Oil Co. 5.
8-26-89 E. R. Goode.
14-20-88 Lake Valley Oil Co.
25-25-89 NW. E. R. Goode.
21-26-86 Portland Wyoming 3.
29-26-86 Portland Wyoming 1, 2.
Rigs, 1; wells drilling, 13; total, 14.

ROCK RIVER

Wells Drilling

25-27-29 Producers & Refiners 1.
2-19-78 H. & C., Ohio Oil Co. 12.
3-19-78 H. & C., Ohio Oil Co. 5.
31-20-78 SE, M. L. Lundy.

Shut Down

12-16-74 SW, G. A. Briggs.
10-18-77 Carbon County Oil Co.
12-27-77 McLaughlin et al.
Rigs, 0; wells drilling, 7; total, 7.

FREMONT COUNTY

Rigs

34-34-92 Muskrat, Prod. & Refs. 1.

Wells Drilling

26- 6-2 Keenan Texas Prod. Co. 7.
30- 1-2 Megown, Iowa Wyoming Oil.
10-32-95 Prod. & Refs. 5.
14-32-95 Riverton Pet. & Prod & Refs
27- 6-2 Maverick Drilling Co.
9-31-98 Martin F. Fold.
14-32-80 Meyers Pet. Co.
21- 1-1 Wyoming Syndicate.
15- 5-1 Carter, Union Oil Co.
30- 1-2 William M. Campbell.
20-32-98 Frank England, trustee.

Shut Down

28-34-90 SW, B. X. Ward.
21- 1-1 Bridger Oil Co.
27- 6-3 Kinney Coastal Oil Co.
19-27-95 Brimmer, Prairie Oil & Gas.
17-33-94 Winter Baker Interests.
6- 6-2 Union Oil Co.
16-26-95 Sage Creek Pet. Co.
3- 1-2 NE. Teton Pet. Co.
4-31-90 Derby Dome Wyoming.
4-31-98 Burnside Oil Co.
24-32-95 Seal Oil Association.
Rigs, 1; wells drilling, 22; total, 23.

OSAGE

Rigs

30-46-63 NE. Glenn Oil Co.
31-47-63 L. B. Hansen.

Shut Down

42-46-63 Wyoming Oil & Gas Co.
10-46-61 Lenhart & Briggs.
8-46-63 Griffith Oil Co.
Rigs, 2; wells drilling, 3; total, 5.

NATRONA COUNTY

Wells Drilling

4-29-81 Iowa Wyoming 13.
1-28-80 NE Greybeal Syndicate.
13-33-80 Wheeler, Millard et al.

Shut Down

3-13-85 Midwest Ref. Co. 3.
26-35-84 Harris & White.
Rigs, 0; wells drilling, 5; total, 5.

LINCOLN AND UINTAH COUNTIES

Rigs

13-28-113 Tip Top Oil Co.
12-29-113 Cretaceous Oil Co.
4-26-113 Wyoming Reserve Oil Co.

Wells Drilling

33-27-113 Shidler Syndicate.
29-28-113 Wyoming Production Co.
1-28-114 Lacky, Leo Stein.
6-28-112 Tracy, Y. Cannon.
3-26-113 California, Pet. Co. 5.
34-27-113 California Pet. 8, 10.
34-27-112 California Pet. Co. 2.
9-29-113 Guy B. Hockett et al.
23-21-117 NE Lincoln Dev. Co.
32-19-116 Cumberland Dome Oil Co.
16-27-113 Good & Nutting.
14-21-117 NE Pioneer Oil Co.
30-15-118 NE Stanberg Pet. Co.
22-27-113 NW W. F. Atkins et al.
21-27-113 SE Midwest Ref. Co. 1.
15-26-113 Texas Prod. Co.
36-27-113 SW Squires Oil Co.
3-26-113 SW Superior Oil Co.
26-27-113 NW Wooten Interests.
3-26-113 NW Mid States Oil Co.
Near Afton, Great Western Oil Co.
32-36-113 Fawcett-McCherrin Interests 1.
15-26-113 Fawcett-McCherrin Interests 2.
15-21-115 Pacific Properties Co.
6-15-118 Vulcan Oil Co.
9-26-113 Transcontinental Oil Co.
17-27-113 SE Western Slope Oil Co.
20-26-113 Murphy-Day's Oil Co.
35- 2-113 Associated Producers.
31-15-118 Olsen & Zimmerman
10-14-118 Wilcox-Henley.
12-15-118 Spring Valley Oil Co.

Shut Down

20-19-116 C. C. Conger et al.
32-19-110 Johnson, Granger Oil Co.
22-28-112 NE Margaret Kay.
21-15-118 NE Mrs. D. Connel 3.
22-26-113 Big Piney Oil Co.
4-26-113 Uintah Oil Co.
3-26-113 Wyoming Reserve Oil Co.
3-26-113 Reece Oil Co.
26-27-113 Myrta Bonnett.
13-27-113 H. H. Goddard.
Rigs, 3; wells drilling, 43; total, 46.

BAXTER BASIN

Shut Down

26-17-104 Associated Oil Co. 3.
23-17-104 Associated Oil Co.
24-17-104 SE Montical Oil Co.
8-16-104 SE Montical Oil Co.
30-18-104 Midwest Ref. Co. 6-AX.
27-27-104 Montical Oil Co.
11-19-104 Prod. & Ref.-Marland.
Rigs, 0; wells drilling, 7; total, 7.

MISCELLANEOUS

Rigs

25-37-63 Buck Creek Oil Co.
Baggs Dome, M. M. Armstrong.

Wells Drilling

2-39-61 Harry E. Briggs 3.
8-32-72 NE O'Bannon & Barker 3.
13-25-66 Greyrocks, A. E. Jacobs.
28-31-69 John Ackard et al.
17-27-60 Agate Basin, Hollingsworth Bros.
19-27-68 McKinley Oil & Gas.
28-17-67 Gose Syndicate.
17-46-62 R. C. Tarrant et al 2.
8-44-60 Briggs & Sartain.
12-29-27 Platte Valley Drilling Co.
17-47-72 Rider, Carter Oil Co.
Guernsey district, Illinois Syndicate.
16-33-68 SW Schuyler et al.
1-32-68 A. E. Mauft et al.
32-62-67 SW Western Consolidated Oil Co.
24-62-62 Foreman et al.

Shut Down

5-51-67 C. M. Carroll et al.
7-47-82 Fairway Oil Co.
5-31-70 Criterion Oil Co.
29-49-64 Osage Trust Co.
18-29-68 Glendo Oil Co.
1-44-61 Osage Trust Co.
31-27-67 NW Atlas Oil Co.
35-48-65 Lilley, Pump Creek Oil & Gas.
Rigs, 2; wells drilling, 24; total, 26.

MONTANA

CAT CREEK

Shut Down

21-15-30 Sevals & Fisher.
31-15-30 Masser, Kessling Oil Co.
11-15-29 Cooke-Coolidge.
12-15-28 Van Tassel, California Co.
1-15-29 Custer Oil Co.
9-15-29 Frantz Oil Corp.
36-16-28 Hadrock Oil Corp.
7-15-29 NW Hogan et al.
11-15-29 Fifty-Six Pet. Co.
15-15-30 Swartz et al.
18-16-28 Peerless Oil Co.
Rigs, 0; wells drilling, 11; total, 11.

KEVIN SUNBURST

Rigs

32-35- 1 Putnam, Ohio Oil Co. 6.
32-35- 1 Putnam, Ohio Oil Co. 7.
35-35- 2 Abell, Abell Oil Co. 2.
25-35- 2 Abell, Hardrock Oil Co. 5.
23-35- 2 Reeg, Ohio Oil Co. 6.
30-35- 1 Maughans, Ohio Oil Co. 14.
30-35- 2 McBride, Canadian Oil Co.
20-34- 1 Zacher, Minot Oil Co.

Wells Drilling

31-35- 1 Byrne, Fulton Oil Co. 21.
10-35- 2 Bruins, Ohio Oil Co. 5.
32-35- 1 Putnam, Ohio Oil Co. 3.
28-35- 2 Lorensen, California Oil Co. 5.
29-35- 2 Johnson, Carter Oil Co.
4-33- 2 Stinchfield, Carter Oil Co.
25-34- 1 Seigle, Carter Oil Co.
11-35- 2 Lind, Carter Oil Co. 4.
22-36- 2 Lorensen, L. W. Hill 11.
33-35- 1 Haskins, Caine et al.
22-35- 1 Cleveland, Kalispell Coleman 3.
35-35- 2 Byrne, Delphia Oil, Ltd.
27-35- 2 Lorensen, L. W. Hill 12.
33-35- 1 Haskins, Ski-U-Mah Oil Co. 2.
33-35- 1 Haskins, Adams Co. 4.
17-29- 2 Oberly, Adams Oil Co. 1.
4-34- 2 Norum, Sunburst Oil & Ref. Co.
30-35- 1 Emmons, Dakota Montana 17.
13-32- 2 Peterson, Conrad-Edwards.
27-35- 2 Lash'augh, California Pet. Co. 12.
20-34- 1 Robert Smith Interests.
1-32- 1 Sunburst Oil & Gas.
30-34- 1 Clarence Prosise.
25-35- 2 Stannard, Wyomont O. & R. 8.
25-32- 2 Knobes, Howe-McCormick 2.
1-34- 2 Steele, Oldsbury Syndicate.
7-35- 1 Russel, Reservation Oil Co.
30-35- 1 Stannard, Rose Oil Co.
8-34- 2 Pittsburg Montana Oil Co.
32-36- 2 Roundsley, Sunburst Oil & Gas Co.
20-35- 2 Halter, Sunburst Prod. Co.
18-34- 1 Skinner, Creel et al.
7-34- 1 Harte, Russel et al.
35-35- 2 Sunburst Oil & Gas.
22-35- 2 SW Lorensen et al.
29-35- 1 Maughans, Sweeney Oil Co. 4.
1-34- 2 Steele, Bruce Radigan 2.

Shut Down

32-35- 1 Caine, "56" Pet. Corp. 22.
14-34- 2 Jenkins, Creel Sunburst 2.
15-32- 1 Manson, Sunburst Oil & Ref. 1.
11-27- 2 Lorum, S. Hart Green.
17-31- 1 Dunkirk Drilling Co.
21-31- 1 Danielson, Crescent Oil Co. 3.
25-34- 2 Moffat, Mouse River Oil Co.
23-36- 3 Carroll, Red Top Oil Co.
24-34- 2 Morton, Medford Oil Co.
29-36- 2 Loy Oil Co.
28-36- 2 Kalmont Oil Co.
17-34- 2 Larson, Pondera Valley Oil Co. 2.
12-34- 1 Peterson, Lucky Forty Oil Co.
16-34- 2 Rainbow Oil Co.
Rigs, 8; wells drilling, 51; total, 59.

MISCELLANEOUS

Rigs

24-15-14 Fullerton Oil Co.
4-28-30 Mid-Continent Oil Co.
34-23- 2 Rainbow Syndicate.

Wells Drilling

29-31- 2 Johnson, Carter Oil Co. 1.
13-33- 2 Prairie Oil & Gas Co.
12-22- 3 Mann, Allen Oil Co.
27-22-15 Clegget Dev. Co.
25- 1-21 Linco Oil Co.
35-12-22 McElwain Dev. Co. 2.
25-14-28 Winnet Pacific Oil Co.
17- 7- 1 Madison Oil & Gas 1.
32- 4-18 SW Empire Oil & Gas.
13- 3-22 Murray & Burke.
23-36- 3 Red Top Oil Co.
22-19-13 McKenzie Drlg. Co.
24-21-17 Melton Corp. Fenholt.
24- 1-21 Record Pet. Co. 3.
17-27- 6 Julian Pet. Co.
35-30- 3 Hiland-Van Dale.
2-29- 1 Big Eleven Oil Co.
12- 5-30 Bull Dog Oil Co.
29-28-37 Glasgow Exploration Co.
19- 3-23 Dickie, Norbeck Co.
31-31-20 Round Butte Oil Co.
Medicine Hat, Roth Syndicate.
34-23- 2 Allen Oil Co.
1-31-31 Big Dome Oil Co.
21-37- 5 Utah Western Pet. Co.
13- 8- 2 Coal Ridge, Montana Oil & Gas Co.
23- 3-24 Link, Euclid Oil Co.

Shut Down

23- 3-21 Little Basin, Prairie Oil & Gas Co.
21-35- 7 Newell, Kalispell Pet. Co.
9-18-26 Fould, Montana Major Oil Co.
17-35-23 Rose Oil Co.
3-22- 3 NW Elk Horn Oil Co. 2.
34-22- 1 Great Northern Mutual.
33-16-28 NW Oakmont Pet. Co.
7- 8-57 Wolf Creek, Cal. Montana.
28- 8-45 Montana Belle Oil Co.
21- 7-21 SW Atlantic Pet. Co.
34- 3-24 Broadview Synd.
17- 3-18 NE Gibson Land Co.
33-16-29 NW Oakmont Pet. Co.
27-36-12 SW Mountain Chief Oil Co.
14-31- 1 Dunkirk Oil Co.
9-21-14 Glenholm Oil Co. 2.
18-22- 3 SW Elk Horn Oil Co.
32-35-20 Butler Oil & Gas.
24-30- 1 Continental Prod. Co.
20-24- 1 McDonald et al.
3-27- 8 Robinson et al.
McDonald Creek, Wilson Fisher 3.
32-36- 2 Weill Syndicate.
25-12- 1 Ainsworth, Neudigate Interests.
18-30- 3 Great Northern Prod.
24-10-39 Jones et al.
2-26- 2 M. M. Edwards.
7-27- 7 Circle Oil Co.
4- 2-25 SW C. B. McMinniman.
26-10-29 Stellar Oil & Gas 6.
9-10-39 Stellar Oil & Gas 5.
7-21- 1 Tri-State Oil Co.
12-11-13 Kalispell Syndicate.
24-14-25 Henry Seibert.
8- 4-22 Hoosier Oil Co.
26- 7-30 Gas Production Co. 15.
13- 3-22 NE Murray & Burke.
34- 3-24 Broadview Syndicate.
Rigs, 3; wells drilling, 65; total, 68.

COLORADO

Rigs

27-16-65 Niles, Philips Pet. Co.
35-18-70 Richman, Lee Stock.
17-33- 7 Van Ruff & Miller.
7- 9-68 Gault-Platt, Union Oil Co. 4.
1- 9-79 Peterson, Continental Oil Co.
5- 6-86 Quaintance, Texas Prod. Co. 3.

Wells Drilling

16-10-69 Buckeye, A. A. Rollestone.
28- 1-70 Adlum, Offset Oil Syndicate.
34-17-70 Mutual Oil Dev. Co.
17- 4-69 Barthoud, Five Square Oil & Gas.
5-1- 70 Martin, Essok Oil Co.
34-18-70 Continental Oil Co. 581.
19-19-69 Florence Oil Co. 3.
4-47-16 Mullen, General Pet. Co.
29-26-57 Bell Ranch, Timpas Dome Synd.
12- 6-86 State, Texas Prod. Co. 1.
10- 4-91 Wick, Texas Prod. Co. 3.
10- 4-91 Wick, Texas Prod. Co. 5.
2- 8-76 Pollock, Continental Oil Co. 1.
31-10-68 Buckeye, Union Oil Co. 5.
30-10-68 Buckeye, Union Oil Co. 4.
26-34-48 Jones, J. R. Philips.
34- 3-70 Prechtel, Left Hand Oil Co.
35-18-70 Donnelley Bros.
12-34- 7 Ferguson, E. B. Klem et al.
17-34- 2 Ben Owen.
27-41-10 State, Traders Oil Co., Inc.
35-18-70 Continental Oil Co. 583,384.
11- 1-44 Yuma Valley Oil Co.
6-47-18 Wilcox, General Pet. Co. 2.
30-20-63 Baxter, Puckett et al 2.
27- 3-94 Freeman, Texas Prod. Co. 1.
13-23-50 Ligget, Caddo Oil Co.
24-2-103 Tidewater Associated Oils.
35-18-70 Continental Oil Co. 579.
11-30-69 Foley & Goldsworthy.
35-38-19 Wilcox, General Pet. Co. 1.
7- 9-68 Dement, Union Oil Co.
35- 5-91 Knowlton, Texas Prod. Co. 9.
33- 5-81 Knowlton, Texas Prod. Co. 10.
15- 4-91 Pohlman, Texas Prod. Co. 1.
31-2-102 Emerald, Texas Prod Co. 2.
30-2-102 Rangeley, Midwest Ref. Co. 2.
22- 4-92 Parkinson, Midwest Ref. Co. 4.
30- 2-70 Spurgeon, Boulder Pet. Corp.
14- 1-48 Yuma Oil Dev. Co.
32-33-12 Hutchinson, E. J. Miley.
2- 8-68 State, Atlantic Pet. Co.
23- 1-70 Daniels, Republic Oil Co.
21- 6-91 Patterson, Platte Valley Oil Co.
13-33-12 NW W. H. Hall et al.
34-32-65 No Jack Oil Co.
6- 7-68 Brown, Fifty-Four Oil Co.
4- 6-69 Webster, Douglass Oil Co.
11-19-65 Zenith Oil Co.
33-36- 9 Latten, North East Colorado Oil Co.
11-33-12 Snyder, Ohio Oil Co.
9-17-69 John, Jr., Red Creek Oil & Gas.
28-28-52 South East Colorado Oil Co.
30-10-68 Warren, Poudre River Oil Co.
1- 8-68 Warren, Consolidated Oil Fields.
16-20-69 E. R. Goode et al 2.
17- 9-68 Elder, Farrell's Associates.
34- 9-69 Ruff, Equitable Oil Co.
14- 1 68 Smith, Retter Oil Co.

Shut Down

9-34-62 Great Dome Oil Co.
13- 4-92 Camp, Moffat Pet. Co.
15-21-65 Union of Colorado.
10-24-69 Tamuco Exploration Co.
28- 3-65 Watkins, Miller Oil Co.
1- 2-68 Orrison, Municipal Oil Co.
21-20-69 Majada Oil & Gas.
36- 9-69 State, Union Oil Co. 1.
8- 6-68 Warren, Union of Colorado.
30-33-61 Davey, Benj. Davey et al.
31-18-51 Mineral Exploration Co.
35-22-65 NE San Carlos Oil Co.
25- 1-69 Everhard, Boulder Oil Corp.
25-24- 1 SW Utah Southern Oil Co.
32-30-63 Baxter, Salida Oil & Ref. Co. 2.
32- 2-69 NE White River Dev. Co.
11- 1-44 Hildrith, Hessick Drilling Co.
19- 5-69 Alps, Gateway Oil Co.

5-8-103 Gypsy Oil Co.
4-8-102 Smith, Sun Oil Co.
12-10-68 SE Imperial Oil Co.
5- 8-68 NE American Pet. Co.
4-45-16 Gilmore Oil Co.
1- 6-68 Majestic Oil Co.
4-32-67 Tulsa Leasing Co.
14- 8-68 Ruff, Victory Oil Co.
9-12-68 Panuco Exploration.
1-9-69 NW Great Northern Oil Co.
4- 7-86 Elkhead Dev. Co.
10-27-45 NW Lamar Oil Co.
16-21-65 Columbia Heights Oil Co.
Rigs, 7; wells drilling, 92; total, 99.

UTAH
Rigs

5-30-20 Rose, Desert Pet. Co.
16-30-25 Union of California.
20-25-21 Moab, Empire Pet. Co.
Wells Drilling
1-30-20 Utah Pet. Co.
28-41-19 Canyon, Utah Southern Oil Co.
24-26-21 Moab, Utah Oil Dev. Co.
17-22-19 Armstrong Oil Co.
28-40-18 Noble, Utah Southern Oil Co.
26-41-19 Francis-Utah Pet. Co.
5- 2-91 Prommel, Midwest-Snowden McSweeney.
17-34-24 Boulder Knob Oil & Gas.
8-26-22 Fimbar Oil Co.
19-14-19 Elk Ridge, Midwest Exploration Co.
16-28-20 Hazelwood, Utah Southern & Equity Oil.
4-28-19 Western States Dev. Co.
12-30-20 Western States Dev. Co.
8-30-20 Empire Oil & Fuel Co.
24-25-21 Big Six Oil Co.-Embar Oil.
4-22-19 SE Crescent Eagle Oil Co.
8-26-22 Utah Oil Dev. Co.
31- 9- 8 Utah Pet. Co.
19- 9- 8 E. J. Raddatz.
27-41-19 Utah Southern Oil Co.
19-22-21 Utah Oil Ref. Co.
26-40-90 Utah Oil Ref. Co. 2.
16- 2- 5 Monroe Oil Co.
28- 3-24 Clay Basin, Prod. & Ref. 2.
17-27-20 J. H. Shaffer, Midwest & Utah Southern.
23-14-92 Mt. States Pet. Co.
27-21-19 Western States Dev. Co.
4-19-25 Charles Orchard et al.
Shut Down
2-12-20 L. L. Travis.
21-22-22 Hope Syndicate.
6-14-13 San Juan Dev. Co.
23-42-17 Monumental Oil Co.
12-19-13 Ute Pet. and Utah Southern.
13- 4-16 Castle Dale Oil Co.
27-16- 4 Producers Oil Co.
Lakeside Dome. W. H. Holmes.
25-13-13 Utah Central Oil Co.
Diamond Fork. Gustaven Oil Co.
Rigs, 3; wells drilling, 38; total, 41.

NEW MEXICO
Rigs

12-29-19 Continental Oil Co. 23.
32-17-27 Navajo Oil Co. 1.
10-29-11 Kellenberger, R. M. Smith et al 1.
10- 8-31 Rhodes, Midwest Exploration Co.
34-16-31 Calrock, Texas Prod. Co.
6-24-25 Frontier Oil Co.
33-18-28 Pueblo Oil Co.
9-20-11 F. G. McMahon.
19-36-34 Huntington Park Oil Co.
10- 4-28 Oliver Weill.
5-18-28 State, Tyler et al.
Wells Drilling
30- 8-31 Frio, Midwest Exploration Co.
25- 7- 2 Stone et al.
30- 6- 3 Tome Grant, Gilmore & Sheldon.
36- 5- 6 Navajo Oil Co.
12- 7- 7 DeHart, Shinnock Reynolds et al.
3- 3-15 Duran, Diamond Oil Co.
8-29- 9 Pine Buttes, Union Oil & Mining Co.
25-28-11 Larson Oil & Mining Co.
17-29-13 Talmar, San Juan Pet. Co.
22-30- 9 Haren, Coon-Hennis Synd.
2- 4-19 Woods, Woods et al.
21-17-30 Kisler, Mid-Continent Pet. Co.
8- 7-31 Argo Oil Co.
2-29-17 Rattlesnake, Continental Oil Co. 1.
12-29-19 Rattlesnake, Continental Oil Co. 23.
3-27-17 Table Mesa, Continental Oil Co. 11.
21-18-28 Lackawanna Oil & Ref. Co. 7.
17-16-27 Lackawanna Oil & Ref. Co. 6.
24-17-27 Russel, Empire Gas & Fuel Co. 1-B.
24-17-27 Russel, Empire Gas & Fuel Co. 2-A.
2-18-27 State, Empire Gas & Fuel Co. 3-A.
11-20-30 Hale, Marland Oil Co.
15-17-32 Beardsley, Maljamar O. & G. Co.
15-21-33 Govt. land, Covert et al.
29-17-18 Wilson, Texas Prod. Co.
4-20-34 Jackson, Texas Prod. Co.
32-26-37 Rhodes, Texas Prod. Co.
34-16-31 Texas Prod. Co.
14-24-30 Paso Monte, Sun State Pet. Co.
5-30-20 Honey, Farrels Associated.
25- 8-32 Foley-Griggs, Gibson Oil Corp.
11-18-27 Govt. land, Lane Etz. No. 1.
11-16-32 State, Caprock Oil Co.
25-19-35 State, Exploration Oil Co.
22-11-26 Shugart, Delmar Oil Co.
27- 4-22 NW Trieg Syndicate.
24-13-30 Arena, Oil Co.
4- 2-20 Henkle et al.
20- 7- 1 Arnold et al.
30- 6- 2 Gilmore & Sheldon.
13-32-29 Workman, Ohio Oil Co.
24- 7-29 Wells, Ohio Oil Co. 1.
18-17-32 Mitchell, Ohio Oil Co. 1.
21-17-30 McIntire, Wooley-Jones.
16-17-31 Keil, Prairie Oil & Gas.
2-29-19 Rattlesnake, Continental Oil Co. 17.
4-17-34 Inglefield & Bridges.
7- 6- 8 Weber, Jones & Newberry.
28- 6-10 Randall et al 2.
22- 3-13 SE Pinos Wells Oil Corp.
23- 4- 1 Seipple Oil Co.
9- 1-31 Pouder & Pomeroy.
17-18-28 State, Williams Pet. Co.
34-17-32 Govt. land, Texas Prod. & H. D. B.
21-29-11 Jackson, "26" Oil Co.
22-18-34 State, McDonald et al.
26- 6- 2 Acme Oil Co.
24-31-11 South West Dev. Co.
11- 3-32 Curley, Contillion Oil Co.
8- 6- 1 Navajo Oil Co.
10- 3-17 NW Navajo Oil Co.
16-29-24 Eureka Oil Co.
10-25-26 Moore, Devins & James.
30-20-10 Benedum & Trees.
22-25-21 Embar Oil Co.
5-17-28 SE Miley Oil Co.
18- 7-21 Ventura Oil Co.
16-18-28 Compton-Hausenfus-Lewellyn.
17-18-28 SW Cummins No. 2.
4-18-28 Pueblo Oil Co.
4-21-27 M. M. Miller.
15-29-11 Bloomfield Oil & Gas.
16-23-24 California Co.
16-29-11 SE C. S. Ringle.
34-29-11 C. S. Ringle.
4-21-30 SW Van Cleve & Kronen 2. 3.
24-10-27 NW R. C. Christman.
8- 2-14 Simmons et al.
17-28-28 NW W. G. Hurst.
22-18-27 South East Colorado Drilling Co.
24-30-13 Portage Oil & Gas.
19-18-29 Bujac-Wade-Murphy.
34-11-11 Garland, Congress Oil Co.
1-18-31 SE Sullivan et al.
18-12-34 State, Holmes & Huey.
36- 1-21 Ingram, Navajo Oil Co.
7-29- 7 Federal Drilling Co.
32- 6- 1 New Mexico Dev. Co.
Shut Down
12-19-26 Billings, Hamilton Pet. Co.
11- 6-27 State, Sparrow & Drake.
9-30-11 Chrisman, New Mexahoma Oil Co.
16- 1-27 McAdoo Oil Co.
32- 6-10 Minerman et al.
31-19-23 Pruitt, Ohio Oil Co.
6- 18-33 Jewett, Ohio Oil Co.
22-16-30 Sellery, Ohio Oil Co.
23-16-29 Young, Ohio Oil Co.
21-17-28 Johnson, Ohio Oil Co.
27-19-38 Govt. land, Mesculero Oil Co.
1-17- 9 Santa Fe, Hurst et al.
14- 3- 8 C. J. Stanley.
1-22-17 SE Blue Bird Oil Co.
17-20-11 SW Hubbell & Hall.
12-30-11 Stein, Miley Oil Co.
3-13-14 State, S. Dysart et al 2.
12-11-11 S. Dysart et al.
11- 4-35 Sanders, Frio Oil Co.
26- 7- 2 Swisher & Wallace.
27-17-16 Chebeauque Syndicate.
9- 6-24 Grady Oil Co.
12-17-31 Nichols, Ohio Oil Co.
22-19-27 NW Valley Oil Corp.
31- 3-15 NW Wyoming-Colorado Oil Co.
29-29-11 Montezuma Syndicate.
9-30- 9 Rainbow Oil Co.
11-20-29 Rawson, William Dooley.
26-18-18 New Mexico Oil Co.
30-28-11 New Mexico Milwaukee Synd.
23-18-15 E. M. Treat.
21-30-11 Home Gas Co.
1- 3-32 NE Gurley Oil Co.
24-21-11 Angelus Mining Co.
28-18-28 SE Quillen & Dunnet.
15-21-23 NW Zeppenfield Co.
16- 1- 7 Fort Sumner Oil Co.
33-11-35 Tilton & Croft.
Rigs, 11; wells drilling, 130; total, 141.

WYOMING
Wells Completed

8-33-76 Humphrey, Continental Oil Co. 42 40
2-33-76 Fenix, Edelman Oil Co. 1 .. 3
6-33-76 Walker, Wendel et al ..... dry
3-33-76 Barber, Wyomont Oil Co. 4 .. 10
26-40-79 SW Midwest Oil Co. 3 50
2-39-79 NW Midwest Oil Co. 6-L 183
26-40-79 NE Wyoming Oil Fields 3-L .3902
23-40-79 SE Wyoming Asso. 19-L 118
23-40-79 SE Wyoming Asso. 21 35
26-40-79 NW Wyoming Asso. 22-L ...3601
26-40-79 NE Wyoming Oil Fields 13-A. 50
35-40-79 NW Wyoming Asso. 24 50
3-39-79 NE Salt Creek Cons. 1-L 36
32-40-79 SW Consolidated Oil Co. 20 SH 99
26-40-79 NE Wyoming Asso. 16-L 3308
26-40-79 NE Wyoming Asso. 31-L 1011
23-40-79 SW Wyoming Asso. 34-L 64
23-40-79 NW Wyoming Asso. 32-L 120
35-40-79 SW Midwest Oil Co. 34-L .. 270
35-40-79 SW Midwest Oil Co. 31-L ..1198
26-40-79 NW Wyoming Asso. 34 37
26-40-79 NE Wyoming Oil Fields 1 37
34-40-79 SE Wyoming Asso. 1-L 1327
30-40-78 NW Wyoming Asso. 32-A 60
24-40-79 NW Wyoming Asso. 19 35
24-40-79 SW Midwest Oil Co. 34-A 40
34-40-79 NE Wyoming Asso. 36-L 200
35-40-79 NW Wyoming Asso. 15-L 712
23-40-79 NE Wyoming Asso. 36 50
23-40-79 SE Wyoming Oil Fields 21-L .3978
35-40-79 SW Midwest Oil Co. 4-L 2120
35-40-79 SE Wyoming Asso. 18-L 440
31-58-99 Tip No. 6, Midwest Ref. Co. 3. dry
3-43-93 Corley, Ohio Oil Co. 1 ..... dry
5-58-99 R. R. land, Henderson Oil Co. 1 10
35-22-86 Sugar Crek, Prod. & Ref. .... dry
9-21-84 St. Marys, Prod. & Ref. ..... dry
25-26-88 Hughes Royalty Co. 50
10-26-90 Prairie Oil & Gas 50-A 669
2-26-90 Utah Oil & Ref. 6-A 300
13-17-77 Quealy, Texas Prod. Co. .... dry
22- 6- 2 Keenan, Texas Prod. Co. 6 .. 700
27- 1- 1 Garner, Union Oil Co. ..... dry
La Barge, Rainbow Oil Co. 100
35-17-70 Horse Creek, Carter Oil Co. .. dry

Wells completed 45
Production 25066
Dry 8

MONTANA
Wells completed

35-35- 1 Byrne, Julian Pet. Co. 100
28-35- 1 Dipple, Ferdig Oil Co. 2 ..... dry
27-35- 2 Lashbaugh, California Pet. Co. 3 ..... dry
22-34- 1 Dahl, California Pet. Co. 1 .... dry
31-35- 1 Allen, "31" Pet. Co. 6 15
33-35- 1 Haskins, Adams Co. 4 ..... dry
33-35- 2 McCormick, Diamond Oil Co. 9 15
33-35- 1 Dovelin, Bottineau Minot 4 6
28-35- 2 Lorensen, California Pet. Co. 5. 200
28-35- 2 Moe, California Pet. Co. 3 247
33-35- 1 Adams, Ski-U-Mah 2 250
32-35- 1 Putnam, Ohio Oil Co. 5 15

Wells completed ..6 12
Production 848
Dry 4

COLORADO
Wells Completed

23-33-12 Pulliam, Erdman et al 2
34- 4-92 Taylor, Marland Oil Co. ..... dry
35-18-70 Continental Oil Co. 582 150
35-18-70 D. K. Wilson, Stock Bros. 20
35-18-70 Dunn, J. J. Selvin 25
5- 6-86 Thompson, Texas Prod. Co. .... dry
30-10-68 Plummer, Union Oil Co. 50
19- 8-68 Larsen, Union Oil Co. 2 65
26-10-68 Foster, Union Oil Co. 400

Wells completed 9
Production 712
Dry 2

NEW MEXICO
Wells Completed

28-18-28 Allen-Toomey, Ohio Oil Co. 8 .. 25
28-17-28 SW Navajo Oil Co. 2 ..... dry
17-18-28 State, Williams Pet. Co. 5 35
36-11-27 Buffalo Roswell ..... dry
11- 3-32 Contillion et al ..... dry
14-13-14 State, Consolidated Oil Co. .... dry
22-29-11 A. M. Edwards, trustee 15
5-17-32 Mitchell, Maljamar Oil & Gas 300

Wells completed 8
Production 375
Gas 4

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	11	80	2	0	0	21	21
Allen	4	7	0	0	0	11	11
Barren	13	92	3	0	0	25	25
Ohio	15	1,630	3	0	0	29	29
Daviess	2	13	0	0	0	4	4
Hancock	0	0	0	0	1	0	1
Cumberland-Monroe	4	47	0	0	0	14	14
Simpson	0	0	0	0	0	1	1
Casey	0	0	0	0	1	0	1
Butler	0	0	0	0	0	3	3
Clinton	1	150	0	0	1	2	3
Adair	0	0	0	0	1	0	1
Grayson	0	0	0	0	0	2	2
Edmonson	1	10	0	0	0	0	0
Wayne	4	38	1	0	0	6	6
Lee-Owsley	1	5	0	0	3	5	8
Wolfe	0	0	0	0	0	3	3
Morgan	1	1	0	0	0	0	0
Estill	12	21	3	0	0	5	5
Powell	0	0	0	0	0	1	1
Lawrence-Johnson	1	5	0	0	0	1	1
Johnson-Magoffin	8	47	1	0	2	10	12
Floyd-Knott	2	0	0	2	1	3	4
Knox	0	0	0	0	0	5	5
Elliott	0	0	0	0	0	1	1
Menifee	0	0	0	0	0	1	1
Carter	0	0	0	0	0	2	2
Laurel	0	0	0	0	0	1	1
McCreary	0	0	0	0	0	2	2
Kentucky	80	2,146	13	2	10	158	168
Tennessee	4	435	0	0	2	25	27
Mississippi	0	0	0	0	12	16	28
Alabama	0	0	0	0	0	6	6
Florida	0	0	0	0	2	11	13
Total Mar.	84	2,581	13	2	26	216	242
Total Feb.	90	1,965	14	3	21	187	208
Difference	6	616	1	0	5	29	34

WELLS COMPLETED
WARREN COUNTY

Bowling Green—Cooper Morgan, E. H. Fuller 5 20
W. L. Bryant, Zickers Drlg. Co. 1 20
C. F. Amos, Lucky Strike Oil 1 10
C. G. Davenport No. 2 Onsel Bros. & Co. 13 5
C. G. Davenport No. 2 Onsel Bros. & Co. 14 10
C. G. Davenport 222-A, Wood Oil 28.. 5
C. G. Davenport 222-A, Wood Oil 29.. 5
J. T. Scott, S. H. Russell & Co. 15.. 4
James Dethridge, A. B. Hudson Attorney 3 1
Rafert Wolthall, Gus New & Co. 1 .... dry
Ed L. Covington, John Boyd 4 .... dry

Wells completed 11
Production 89
Dry 2

ALLEN COUNTY

Scottsville—Lon Oliver, Harley & Coatsworth 6 3
Riley Hunt, Riley Hunt 5 1
W. H. Reed, Harley & Coatsworth 7.. 1
Rube Osborn, Tracey Supply 1..... 2

Wells completed 4
Production 7

BARREN COUNTY

Emery Moore Pool—Deckard, Breeding & Jones 6 7
Hale, Sinning, Hedges & Co. 3..... 8
Gorby Pool—M. Y. Chamberlain, J. W. Porter 4 9
Lecta Pool—Vance Taylor, Hunt Mitchell & Co. 4 20
C. B. Jones, Norris Bros. & Harrington 1 6
Jones, Norris Bros. 2 10
Pace, Wood Oil 1 ..... dry
John Dean, Ziegler Bros. 2 3
John Dean, Ziegler Bros. 3 2
Browning, Sanson, Norris Bros. & Co. 2, 3 ..... dry
Hall-Baker Pool—Darter, A. W. Ziegler & Co. 7 20
Glasgow—Sink Smith, C. C. Smith 2.. 7

Wells completed 13
Production 92
Dry 3

OHIO COUNTY

Ambrose Pool—J. R. Weller, James C. Ellis 5 150
J. R. Weller, James C. Ellis 6 150
J. R. Weller, James C. Ellis 7 225
Ambrose heirs, Julius C. Miller 3.... 150
Ambrose heirs, Julius C. Miller 4.... 250
Ambrose heirs, Julius C. Miller 5.... 350
Scott Ambrose, Rex-Pyramid Oil 2.... 40
Scott Ambrose, Rex-Pyramid Oil 3.... 175
Romney Taylor, the Ohio Oil 1..... 50
District 10—Nanny Brown, Chicago Petroleum Synd. 5 10
J. U. Bartley, Wood Oil 7 ..... dry
D. Westerfield, Creek Drilling Co. 1.. dry
Collier Pool—J. S. Colyer, Leeper Oil 5.. dry
J. S. Colyer, Leeper Oil 6 75
Panther Creek—R. M. Miller, Panther Creek Oil 19 5

Wells completed 15
Production 1630
Dry 3

DAVIESS COUNTY

Whitesville—John Roby, Leeper Oil 3.... 8
C. D. Veach, Leeper Oil 2 5

Wells completed 2
Production 13

CUMBERLAND-MONROE COUNTIES

Crocus Creek—S. Elliott, Sam K. Baird 1 2
Sulphur Creek—John Finley, Oil Fork Development 2 10
Pulsey Creek—Hughes, McClintock, Reed & Heckathorn 4 25
Hughes, McClintock, Reed & Heckathorn 5 10

Wells completed 4
Production 47

CLINTON COUNTY

Wolf River—Pierce Bros., McClintock, Reed & Heckathorn 6 150
Ed Upchurch, Clinton Oil 1, 2..... abd

Wells completed 1
Production 150
Abandoned 2

EDMONSON COUNTY

Green River—John Poteet, Green River Oil 1 10

WAYNE COUNTY

District 3—Steele heirs, Beaver Petroleum 13 ..... dry
Ell Phipp, John Dillon 1 35
District 13—J. B. Stinson, Kennedy, Taylor & Co. 5 2
Jones heirs, W. O. Souther 6 1

Wells completed 4
Production 38
Dry 1

LEE-OWSLEY COUNTIES

District 35—Gourley-Rodman & McGuire, Black Gum Oil 14 5

MORGAN COUNTY

Ophir District—Joe Cole, Page & Dunham 1 1

ESTILL COUNTY

District 8—Simp Horn, Superior Oil Corp. 28 ..... dry
J. D. Alexander, Superior Oil 10 ..... dry
J. D. Alexander, Superior Oil 11 1
Green Campbell, Superior Oil 7 3
C. Marcum, Superior Oil 1 1
C. Marcum, Superior Oil 2 1
C. Marcum, Superior Oil 3 1
A. F. West & Co., Superior Oil 8 3
Wm. Neal, Wood Oil 15 8
Bud Bringer, Wood Oil 16 2
Kate Sawyer, Breener & Adams 4 .... dry
John Sparks, Breener & Adams 5 1

Wells completed 12
Production 21
Dry 3

LAWRENCE-JOHNSON COUNTIES

District 32—W. M. Ross, S. E. Lohman 5 5

JOHNSON-MAGOFFIN COUNTIES

District 25—Patten Borders, Rexo Oil 10 10
Patten Borders, Rexo Oil 11 10
District 30—L. D. Holbrook, George & Touma 9 2
Roscoe Gullett, Andy Lick Oil 1 5
District 31—Jack Whittaker, Santford & Outram 1 5
J. H. Arnett, Bed Rock Petroleum 26. 10
Sam Hackworth, Model Oil 2 5
Coon Adams, Oliver Jenkins & Co. 2.. dry

Wells completed 8
Production 47
Dry 1

FLOYD-KNOTT COUNTIES

District 21—F. R. Hayes, Distill-Martin Oil & Gas 1 ..... gas
James Martin, Distill-Martin Oil & Gas 1 ..... gas

Wells completed 2
Gas 2

TENNESSEE
CLAY COUNTY

Mill Creek—Burton Langford, Cumberland Valley Oil 2 200
Clark Pool—Gray, Clark-Hill Oil 1 200

Wells completed 2
Production 400

PICKETT COUNTY

Juetta Creek—B. C. Arney, Clark Oil 2.. 10
Mary Harrison, Owens & Turner 2.... 25

Wells completed 2
Production 35

WARREN COUNTY
Wells Drilling

Bowling Green—George Ann Davenport, T. A. Sheridan 7.
J. L. Jenkins 273 acres, Johnson & Julian 11.
Rebecca Russell, R. B. Walker 1.
John Larmon, R. B. Walker 1.
John Crosby, R. B. Walker 1.
Murray Kirby, R. B. Walker 1.
Edward Myers, R. B. Walker 1.
S. E. Tinsley, Lincoln Oil Producing 1.
J. F. Young, Penn Oil Prod. Synd. 7.
E. J. McClain, Garland R Sledge 5
James Deathridge, O. B. & T. Oil 2.
C. P. Amos, Lucky Strike Oil 2.
J. L. Jenkins No. 2, Jennie S. Bright, attorney 4.
Joe Hobson, Joe Hobson 2.
C. G. Davenport No. 2, Onsel Bros. & Co. 15.
C. G. Davenport 222 acres, Wood Oil 30.
Richard Carpento, B. B. Baker 7.
D. C. Butler, Thessen & Cupler 3.
Ora S. Davenport, Ruth Turner 5.
Keller, Alf F. Hughes 1.
Tutt Stovall, J. H. Wright 12.
Wells drillings, 21.

ALLEN COUNTY
Wells Drilling

Scottsville—Lee Moore No. 2, Lee Moore 8.
Lon Oliver, Harley & Coatsworth 7.
Anthony Welch, R. A. Stohr 12.
Riley Hunt, Riley Hunt 6.
Jim Bradley, Reaher & Co. 1.
I. Strait, Dodson & Strait 1.
Connie Justice, James Dobie 1.
Max Willoughby, Dye & Dye 1.
Jess Stitt, Frank Duchen 1.
Arla Wade, J. R. Poynter & Co. 1.
Gen. Woods 2,700 acres, Grace Oil 8.
Wells drilling, 11.

BARREN COUNTY
Wells Drilling

Button Pool—Button, Lew J. Emery, Jr., Sons 1.
Emery Moore—Howard, Breeding & Jones 1.
Delond, Allen & Hartzel 3.
Steffey, Ruby Oil 10.
Hayde Myers, Mazel Oil 4.
Bishop, Bishop & Co. 2.
Dausey, Gassaway Bros. 1.
Deckard, Breeding & Jones 7.
Bradford, Esslinger, Scott & Hice 10
Hale, Sinning, Hedges & Co. 4.

Lecta Pool—S. H. Boles, Kentucky Petroleum Synd. & Co. 3.
Browning, Sanson, Norris Bros. & Co. 4.
Vance Taylor, Hunt, Mitchell & Co. 5, 6.
Browning, Pedigo & Payne 1.
Jones, Norris Bros. 3.
Nichols, J. D. White 1.
Glasgow—Jones, J. R. Elliott 2, 4.
McGuire, Stohr Bros. Oil Corp. 5.
Kinslow, J. R. Elliott 15.
Knob Road—Richardson, Star Oil & Gas 18.
Hatfield, J. J. Sayre 11, 12.
Temple Hill, Foster, T. L. Gorby & Co. 1.
Wells drilling, 25.

OHIO COUNTY
Wells Drilling

Ambrose Pool—J. R. Weller, James C. Ellis 8, 9, 10.
Ambrose heirs, Julius C. Miller 6, 7.
Scott Ambrose, Rex-Pyramid Oil 4, 5.
James Ellis, the Ohio Oil 8, 9.
Rodney Taylor, the Ohio Oil 2, 3.
I. L. Bartlett, Lee & Engle 2.
Mary J. Elmore, Wood Oil 1.
Wallace, Wood Oil 1.
King Pool—R. Mickey, Creek Drilling 1.
Swope Pool—Guenther-Gant, Chicago Petroleum Synd. 13.
Nannie Brown, Chicago Petroleum Synd. 6.
Alonzo Crowe, Ohio Oil 3.
S. V. Flowers, H. A. Henry 1.
Evans Pool—Claud Farmer, Petroleum Exploration 1.
Collier Pool—J. S. Colyer, Leeper Oil 7.
Ellis Station—Joe Bob Ellis, White Plains Oil & Gas 6.
Sunnydale—V. R. Ferguson, Wood Oil 1.
Dean & Deane, Wood Oil 1.
Greenbrier—L. D. Fulkerson, Ohio Oil 1.
Northeast part of county—Chenault Bros. & Thompson 1.
Aetnaville—C. Harrison, Loman & Bolling 2.
Sunnydale—Mark Renfrew, Cooper & Black 1.
Rosine—Urban Miller, Rowe & Co. 1.
Wells drilling, 29.

DAVIESS COUNTY
Wells Drilling

Whitesville—M. H. Vaught, Petroleum Exploration 1.
F. K. Higdon, Ohio Oil 1.
Conder, Leeper Oil 1.
Pulliam, Bert Thompson 1.
Wells drilling, 4.

HANCOCK COUNTY
Rigs

Pellville—C. H. Henning, E. M. Stebbins 1.

CUMBERLAND-MONROE COUNTIES
Wells Drilling

Crocus Creek—E. H. Brockman, Wood-Haislet & Co. 9.
Burkesville—D. Garmon, Wilcox Bros. 1.
Goose Creek—Williams, Thresher, Shouse & Co. 1.
Paten Smith, Lee Thomelson 1.
Bear Creek—J. M. Dickens, E. M. Treat & Co. 7.
Sulphur Creek—Holeman, Oil Fork Development 3.
Rush, Kanawha Oil 2.
J. B. Riddle, Hook & McComas 2.
Steele Fork—Sarah Shackles, Wilcox Bros. 5.
Pulsey Creek—T. B. Hogan, W. S. Raydure Intereat 1.
Kettle Creek—Hiram Wells, Foster Mitchell 1.
Milt Smith, Smith & Smith 1.
J. Jones, Graves Bros. & Co. 1.
H. L. Blythe, Connell, Zook & Co. 2.
Wells drilling, 14.

SIMPSON COUNTY
Wells Drilling

Franklin—John Pearce, A. L. Mullen & Co. 3.

CASEY COUNTY
Rigs

Near Avon—Hammond, Col. Less Combest 1.
best 1.

BUTLER COUNTY
Wells Drilling

Morgantown — Evans, P. A. and B. A. Evans 1.
Otto Pendley, Roy Hogan & Co. 1.
W. A. Newton, Fowler, Anderson & Hogan 1.
Wells drilling, 3.

CLINTON COUNTY
Rigs

Wolf River—Amalon Phillips, Bryson & Stinson 1.

Wells Drilling

Wolf River—James Scott, Owens, Long & Co. 1.
Fannys Creek—M. A. Pierce, Sells Oil & Gas 1.
Rigs, 1; wells drilling, 2; total, 3.

ADAIR COUNTY
Rigs

Gradyville—Keith, Oklahoma parties 1.

GRAYSON COUNTY
Wells Drilling

Leitchfield—Carville, Robinson & Co. 1.
Jones, Robinson & Co. 1.
Wells drilling, 2.

WAYNE COUNTY
Wells Drilling

District 2—T. T. Davis, Vulcan Oil 18.
H. C. Coffee, Somerset Oil 1.
District 3—Stearns Lumber, Pigeon Rock Oil 11.
District 5—O. E. Gregory, Davy Oil 5.
John Gregory, Rex G. Carpenter 2.
District 13—Cooper Coal, W. E. Woolrow & Co. 6.
Wells drilling, 6.

LEE-OWSLEY COUNTIES
Rigs

Island Creek—McGeorge, unknown parties 1.
Peters, Petroleum Exploration 1.
J. F. Brewer, Monroe Oil 2.

Wells Drilling

District 18—Wylie Bryant, Cook & Co. 2.
John P. Fraley, Wilbourne Caywood 4.
District 26—Baker, Watkins & Co. 1.
Thos. Foreman Co., A. A. Hulette, trustee, 4.
Ben Smith, Black Gum Oil 14.
Rigs, 3; wells drilling, 5; total, 8.

WOLFE COUNTY
Wells Drilling

District 20—Crit Childers, Chrit Childers 4.
Chapman heirs, M. B. French 1.
Granville Spencer, Hillside Oil 1.
Wells drilling, 3.

ESTILL COUNTY
Wells Drilling

District 7—John Bill Rogers, Mt. Spring Oil 15.
District 8—Joe Neal, Wood Oil 3.
Wm. Neal, Wood Oil 6.
Simp Horn, Superior Oil 29.
J. D. Alexander, Superior Oil 12.
Wells drilling, 5.

POWELL COUNTY
Wells Drilling

District 15—John A. Rogers, W. O. Dunham 6.

LAWRENCE-JOHNSON COUNTIES
Wells Drilling

District 22—W. W. Bailey, Garrison & Townsend 6.

JOHNSON-MAGOFFIN COUNTIES
Rigs

District 27—J. J. Proctor, Model Oil 2.
W. L. May, S. J. Patrick 2.

Wells Drilling

District 25—Gardner Blanton, Atlantic Oil Prod. 26.
District 30—Lee Owens, Oliver Jenkins 2.
Bracken heirs, Phillips & Young 4.
W. M. Turner, F. G. Rice & Co. 1.
Joe Cole, Page & Dunham 1.
District 31—B. F. Whitt No. 1, Hupp, Duff & Co. 8.
B. F. Whitt No. 2, Hupp, Duff & Co. 6.
R. L. Salyer No. 2, Burning Fork Oil 5.
Clay Hammond heirs, Hupp, Duff & Co. 1.
Cordia Scott, Elkhorn Coal Corp. 1.
Rigs, 2; wells drilling, 10; total, 12.

FLOYD-KNOTT COUNTIES
Rigs

District 21—Green Howard, Ivyton Oil & Gas 1.

Wells Drilling

District 21—Beaver Creek Coal, Ivyton Oil & Gas 1.
Anderson Hoover, Ivyton Oil & Gas 1.
Frank Gearhart, United Carbon Black 1.
Rigs, 1; wells drilling, 3; total, 4.

KNOX COUNTY
Wells Drilling

Indian Creek—Helton, Petroleum Exploration 2.
Bailey Switch--Dizney, Dizney & McKee, 1, 2.
Sinking Creek—Foreman, Foreman Lumber 1.
Red Bird Creek—Beattyville parties 1.
Wells drilling, 5.

ELLIOTT COUNTY
Wells Drilling

District 34—J. F. Dials, Edra Lee Oil & Gas 6.

MENIFEE COUNTY
Wells Drilling

District 9—Unknown, W. O. Buch 1.

CARTER COUNTY
Wells Drilling

Smokey Hollow—High Owens, R. A. Chiles 1.
Rough Camp Creek—Robins & Watson 1.
Wells drilling, 2.

LAUREL COUNTY
Wells Drilling

10 miles south London—Standard Oil of Kentucky 1.

McCREARY COUNTY
Wells Drilling

Pleasant Run — McCreary County Oil & Gas 1.
Asher, Sampson & Co. 2.
Wells drilling, 2.

Wells Drilling

Celina—Willie White, Blick & Co. 2.
Geo. Tinsley, Lewis & George 1.
Geo. Plumley, John H. Kerr 1.
Mill Creek—Chas. Short, Burman & Pierce 1.
Burton Langford, Cumberland Valley Oil 3.
Len Cunningham, The Ohio Oil 3.
John Pennington, Thos. Willmer 1.
Peterman Bend—Neely, H. Z. Clark Oil 1.
Sam Keisling, J. L. Miller & Co. 2.
James Arms, Herndon & Moorman 2.
Sanders Thurman, Whitenbit Gas 1.
Clark Pool—Stone, H. Z. Clark Oil 1.
Willow Grove—Widow Hargrave, Carnahan & Harr 2.
Jim Stover, A. A. Alexander 2.
Mouth Lock Branch—Hawkins, Blick & Co. 1.
Near Timothy—Leech & Co. 1.
Fox Springs—Mary E. Williams, A. L. Pratt & Co. 4.
Knob Road—E. S. Dalton, Unknown 1.
Near Oakley—Empire Gas & Fuel 1.
Wells drilling, 19.

PUTNAM COUNTY
Wells Drilling

Sinking Creek—J. A. Drake & Co. 1.
Buffalo Valley—Tenn-Alabama Parties 1.
Wells drilling, 2.

PICKETT COUNTY
Wells Drilling

Juetta Creek—B. C. Arney, Clark Oil 3.
Mary Harrison, Owens, Turner & Co. 3.
Luther Martin, Bryson & Stinson 1.
Wells drilling 3.

DE KALB COUNTY
Rig

Caney Fork River—A. W. Austin, Medlen & Co. 1.

RUTHERFORD COUNTY
Well Drilling

Murfeysboro — G. H. Alsup, Rutherford County Oil & Gas 1.

JACKSON COUNTY
Rig

Rought Point—On Bullards Creek, W. S. M. Hughes 1.

MISSISSIPPI

FRANKLIN COUNTY
Rig

Jackson—Pearl River, New York parties 1.

COPIA COUNTY
Rig

Hazlehurst—Brandywine, Benj. J. White 1.
Well Drilling
Near Crystal Springs—L. B. Price 1.
Rig, 1; well drilling, 1; total, 2.

ATTALA COUNTY
Rig

Alta—B. B. Jones 1.

ITAWAMBA COUNTY
Rig

Fulton—Due Steele Oil Co. 1.

SIMPSON COUNTY
Rigs

Sec. 15-2-4—Graves & Fields 1.
Sec. 34-3-3—B. Livingstone & Co. 11.
Rigs, 2.

YAZOO COUNTY
Well Drilling

Sec. 15-13-1 W. Reed, Free Run Oil 1.

WASHINGTON COUNTY
Well Drilling

Sec. 30-14-9 Allen, Alhambra Oil 1.

TISHOMINGO COUNTY
Well Drilling

Near Iuka—Unknown 1.

TALLAHATCHIE COUNTY
Well Drilling

Sec. 23-25-22—Harvey, local concern 2.

MADISON COUNTY
Wells Drilling

Tolis—Transcontinental Oil 1.
Roxana Pet. Corp. 1.
Wells drilling, 2.

STONE COUNTY
Well Drilling

Sec. 36-11-3—Near Magic City, local concern 1.

HINDS COUNTY
Well Drilling

Near Edwards—Baker & Co. 1.

MONROE COUNTY
Rigs

Sec. 22-15-17—Frank Rye, Nat. G. & F. 1
Twp. 13-7e—Mawk, L. B. Mawk 1.
West, Amory Pet. 1.

Wells Drilling

Sec. 29-13-17—Durrett, Quincy Oil 1.
Sec. 8-13-17—Hall, Amory Pet. 1.
Sec. 12-13-18—Nancy Carter, Amory Pet. 1.
Sec. 4-13-18—Crook, Buffalo O. & G. 1.
Rigs, 3; wells drilling, 4; total, 7.

WEBSTER COUNTY
Well Drilling

Sec. 15-21-11—Hensley, Cumberland Oil 1.

LEAKE COUNTY
Well Drilling

Near Conway—Pittsburgh O. & D. 1.

NESHOBA COUNTY
Rig

Near Philadelphia—S. B. King & Co. 1.

LEE COUNTY
Rig

Sec. 14-8-6—Buffalo O. & G. 1.

ALCORN COUNTY
Rig

Near Corinth—A. M. Keisker 1.

WARREN COUNTY
Well Drilling

Near Charleston—Rich & Co. 1.

ALABAMA

MORGAN COUNTY
Well Drilling

Sec. 6-6-4—English, Decatur Oil 1.

HALE COUNTY
Well Drilling

Greensburg—Hall Oil 1.

SHELBY COUNTY
Well Drilling

Chelsea—Scott, Cooksey & Co. 1.

WILSON COUNTY
Well Drilling

Selma—Blue Belle Oil 1.

FRANKLIN COUNTY
Well Drilling

Sec. 28-18-14—Hobson, Pittsburgh O. & D Co. 1.

MARION COUNTY
Well Drilling

Sec. 29-11-14—Clark, J. P. McAlpin 1.

FLORIDA

MONROE COUNTY
Rigs

Sec. 6-51-31—Florida Natural Resources 1.
Sec. -35-34—Biscayne O. & G. of Miami 1.
Rigs, 2.

POLK COUNTY
Well Drilling

Sec. 40-32-27—West Frostproof L. & O. 1.

GLADES COUNTY
Wells Drilling

Sec. 13-39-32—Brewton, H. McCurdy & Co. 1.
Sec 5-38-2—Langford & Co. 1.
Sec. 5-38-32—Seminole Pet. Corp. 1.
Wells drilling, —.

DADE COUNTY
Well Drilling

Sec. 19-54-35—Tamam Trail, Miami O. & Nat. Gas 1.

JEFFERSON COUNTY
Well Drilling

Sec. 19-2-5e—Miller-Gossard, Southern States Oil Corp. 1.

MANATEE COUNTY
Well Drilling

Sec. 15-34-17—Robinson, Speedwell Petroleum Synd. 1.

LEON COUNTY
Well Drilling

Sec. 20-2-1e—Rhodes, Gulf Oil Dev. Co. 1.

HERNANDO COUNTY
Well Drilling

Sec. 29-23-19—Unknown parties 1.

PASCO COUNTY
Well Drilling

Sec. 25-25-16e—Unknown parties 1.

OKEECHOBEE COUNTY
Well Drilling

Sec. 22-36-35 — Opal District, Preston & Gaines 1.

EASTERN FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Allegany	28	61	0	1
Bradford	120	206	0	0
Middle Field	5	10	0	1
Venango-Clarion	27	39	3	2
Butler-Armstrong	8	5	0	3
Southwest Pennsylvania	12	60	4	5
West Virginia	77	145	16	29
Southeast Ohio	74	1,804	11	15
Total March	351	2,330	34	56
Total February	348	2,079	23	69
Difference	3	251	11	13

Summary of Work Under Way

Field—	Rigs	Drg.	Ttl.
Allegany	11	29	40
Bradford	23	138	161
Middle Field	0	4	4
Venango-Clarion	3	15	18
Butler-Armstrong	12	11	23
Southwest Pennsylvania	11	44	55
West Virginia	37	95	132
Southeast Ohio	26	73	99
Total March 31	123	409	532
Total February 28	146	412	558
Difference	23	3	26

WELLS COMPLETED

ALLEGANY FIELD

Breckenridge et al., H. W. Breckenridge et al 1
Fee, Barnes & Scott 1
Fee, McKean Natural Gas 1
Worden, C. W. Cole gas
Fee, Empire Gas & Fuel, Ltd., et al 1
Fee, Empire Gas & Fuel, Ltd 1
Fee, J. W. Johnson et al 1
Fee, J. E. LeSuer et al 1
Crandall, Wightman & Crandall 1
Coast et al., M. J. Crowley et al 1
Fee, McDivitt et al 1
Fee, E. L. McDivitt wtr
McDermott, Wilbart Oil wtr
Fee, Martin Bros. et al 1
Fee, J. M. Hughes et al 1
Fee, A. C. A. Oil Corp. 1
Kinley Oil W. J. Weller et al 1
Fries, N. V. V. Franchot, mgr, trust 1
Multrus fee, Sepany Oil 1
F. D. & B. W. J. Fitzgerald 1
Fee, Kinley Oil 1
Fee, N. V. V. Franchot, mgr, trust 1
Meridan, N. V. V. Franchot, mgr. trust 1
Fries, N. V. V. Franchot, mgr. trust 1
Multrus fee, Sepany Oil 1
Lippert, C. M. Lippert et al 1
Fee, Leland Oil 1
Fee, John C. Minderler Jr. 1

Wells completed 28
Production 61
Gas 1
Water 2

Bradford Field

Whipple, South Penn Oil 2
Ekas, Lloyd & Piper 1
Ekas, Lloyd & Piper 1
Ekas, Lloyd & Piper 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Taylor, Forest Oil 1
Fisher, Forest Oil 2
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 1
Fisher, Forest Oil 2
Chamberlain, T. H. Kennedy 1
Wilson, Denwood Oil 1
Fee, F. S. Boquin 1
Richardson, Hope Oil 1
Fee, J. H. Gibson 1
Devlin, Korner Oil 1
Fee, Hoyle et al 1
Lovell, Towne, Melvin et al 1
Potter, W. E. Burdick 1
Wemer, Patton & Wilson 2
Porter, Forest Oil 2
Baldwin, C. B. Kervin 1
Middaugh, A. L. & L. M. Lilly 1
Marvin, C. E. Potter 1
Keating, Sloan & Zook 1
Union Keating, South Penn Oil 1
Tract No. 1 Hazelwood Oil wtr
Bingham, 296, Andrus & McDowell 1
Corwin, Cora M. Simons 2
Borden fee, T. P. Thompson Jr. 2
Baldwin, Clara B. Kervin 2
Barse, Curtis, Douglass & Lynde 2
Fee, J. V. Goldon 24 2
Fee, Park Est. et al. 14 2
Fee, Park Est. et al. 15 2
Fee, W. F. Sprague 18 2
Fee, F. M. Johnson & Son 25 2
Fee, M. R. Williams 1 2
Franchot, Melvin & Towne 10 2
Fee, Dana & Dana 46 2
Flickinger, C. B. Kervin 3
Fee, South Penn Oil 3
Fee, South Penn Oil 2
Quintuple Oil, Jane Zane Est 2
Bing., Hazelwood Oil 130 1
Bing, 150, South Penn Oil 80 1
Fee, William C. Kennedy Co. 59 1
Fee, Benson & Benson 1
Kennedy & Clarke, South Penn Oil 111 1
Bing, 390, South Penn Oil 1
Fee, Looker Oil 2
Bing, 468, Helen D. and L. C. Brink 2
Bing, 423, South Penn Oil 15 wtr
Bing, 568, Associated Prod. 385 2
Bing, 568, Associated Prod. 387 2
Bing, 533, South Penn Oil 88 1
Bing, 494, South Penn Oil 60 1
Bing, 576, South Penn Oil 119 2
Jones, South Penn Oil 222 1
Bing, 151-154, South Penn Oil 34 1
Taylor, South Penn Oil 40 1
Kendall, South Penn Oil 61 1
Davis, South Penn Oil 28 1
Bing, 501, South Penn Oil 03 wtr
Lots 5 and 6, South Penn Oil 01 wtr
Bing.-Satt., South Penn Oil 119 1
Culbertson lots, South Penn Oil 60 2
Bing, 400 acres, South Penn Oil 77 1
Bing, 400 acres, South Penn Oil 78 1
Bing, 369, South Penn Oil 01 wtr
Kane leases, South Penn Oil 111 1
Tract 1, Hazelwood Oil 01 wtr
Tract 27, Hazelwood Oil 130 1
Bing, 296, Andrus & MacDowell 110 3
Lawton, Esther Oil, Inc., 60 1
Morse Est., Love, Elder et al. 28 1
Elder, S. H. Elder et al. 21 2
Bing, 386, Hooper Est. 1 1
Goodrich, Wal Oil & Gas 3 1
Bing, 391, George W. Bovaird 80 4
Bing, 500, Daly & Healy 36 2
Bing, 464, R. S. Pringle 21 1
Bing, 368, Wilson & Fitzgerald 12 wtr
Bing, 541, Park & Bovaird 41 1
Middaugh, South Penn Oil 1
Whipple, South Penn Oil 1
Jones, South Penn Oil 1
Kendall, South Penn Oil 1
Rew & Hodge, South Penn Oil wtr
Buchanan, South Penn Oil wtr
Corwin, Cora M. Simons 2
Thomas & Sullivan, Stacy & Thomas 2
Broden fee, T. P. Thompson Jr. 2
Bingham 296, Andrus & McDowell 1
Lincoln, L. H. Smith & Sons 2
Garlock, L. H. Smith & Sons 2
Germer, Linwood Oil 1
Potter, Burdick & Stover 2
Russell, Potter & Devore 2
Fee, Kepner Oil 10
Rasey, A. R. & R. A. Stambaugh 4
Rounds, J. W. Kaufman 15
Fee, Penn Oil Products Refg wtr
Fee, D. M. Hoffman Est. 1
Fee, Mix Creek Oil 1
Fee, Mix Creek Oil 2
Fee, Mix Creek Oil 1

Fee, Mix Creek Oil..... 5
Fee, Penn Oil Products Refg..... 1

Wells completed 120
Production 206
Water 10

Middle Field

Lot 40, Kinzua Valley Chemical..... gas
McWilliams, Johnson Bros..... 1
Lot 2, John Hadden 22..... 5
Lot 7, J. G. Cochran 51..... 3
Lot 3767, F. J. Moser 35..... 1

Wells completed 5
Production 10
Gas 1

Venango-Clarion

Diamond, J. & L. Diamond 5..... 1
Hollister, J. C. Atwell 15..... 1
Porter, Smith & Walters et al. 40..... 1
McNellie, Midland Oil Corp. 31..... 1
Cox, George H. Torrey 8..... 2
Cox, George H. Torrey 9..... 2
Craig, Archie E. Fritz 2..... dry
Emery, Berry & Titusville Trust 10..... 5
Emery, Berry & Titusville Trust 11..... 2
Staub, Surety Oil 11..... 3
Foster Farrell, Jenkins & Grimm 25..... 2
Corbett & White, Corbett & White 4..... 1
Miller, C. T. & O. D. McDowell 10..... 1
Irwin, Porter, Hoffman et al. 5..... 1
Sutton & Foster, Hunter & Franklin Trust 14..... 1
McCalmont, Glasser et al. 13..... 1
Kennerdell, J. L. Eakin 51..... 1
Cassidy, Franklin Trust 6..... 1
McLaughlin, Thomas McLaughlin 2..... gas
Shawkey, Alum Rock Gas 4..... 5
Osborn, Rice & Thompson 6..... 2
Crawford—
Kuhns, Braymer & Reitze 3..... 2
Clarion—
Groner, Alum Rock Gas 2..... 1
Kahle, A. D. Shorts et al. 5..... gas
Madgio, Madigo & Co. 1..... 2
Kroh, E. E. Kroh 2..... dry
Beck, J. W. Baker..... dry

Wells completed 27
Production 39
Dry 3
Gas 2

Butler-Armstrong

Wilson, P. McCann & Co. 1..... 1
Iman, Hugh Iman 2..... gas
Myers, Holben, Iman et al 2..... gas
Barkley, M. B. Finnessy 23..... 1
Sterrett, A. Hartman 1..... gas
Bovard, Robinson & Berry..... 1
Gibson, Donaldson & Co..... 1
McNaughton, West Penn Oil..... 1

Wells completed 8
Production 5
Gas 8

ALLEGANY FIELD
Rigs

Fee, Barnes & Scott.
Fee, Empire Gas & Fuel, Ltd.
Reid, agt., State Bank, Boliver, No. 24, et al.
Richardson, S. E. Wightman et al.
Coast et al., M. J. Crowley et al.
Fee, E. L. McDivitt.
Fee, Gilligan & Dermitt.
Fee, Martin Bros. et al.
Fee, A. C. A. Oil Corp.
Zeliff, Carmody & Fesenmyer.
F. D. & B., J. H. Fee et al.
Wells Drilling
Fee, N. V. V. Franchot, mgr. trust.
Meridan et al., N. V. V. Franchot, mgr. trust.
Kinley Oil, J. S. Moody et al.
Karl, Sepany Oil.
Multrus fee, C. M. Lippert et al.
Fee, Leland Oil.
Warters et al., E. D. Quinland et al.
Ryan, M. Shear.
McCaffery & Westran, Mrs. H. S. Westran.
Fee, Arch J. Mooney.
Fee, George H. Zink.
Fee, Kinley Producers.
Chipmonk Land Co., South Penn Oil.
F. D. & B., Black & Derby.
Fee, Empire Gas & Fuel, Ltd.
Fee, McKean Natural Gas.
Fee, C. M. Robinson.
Fee, State bank of Bolivar Nos. 28, 29.
Cleveland, S. J. Cleveland et al.
Fee, Empire Gas & Fuel, Ltd.
Fee, F. E. Richart.
Fee, J. W. Johnson et al.
Fee, C. C. Brennan et al.
McDermitt, Willbart Oil.
Wilson & Reynolds, J. C. Hyde et al.
Fee, Gilligan & Dermitt.
Fee, J. M. Hughes et al.
Fee, Bartoo et al.
Fee, C. M. & W. L. Dunning.
Rigs, 11; wells drilling, 29; total, 40.

BRADFORD FIELD
Rigs

Franchot, F. M. Johnston & Son 36.
Franchot, Pennbrook Oil 19.
Franchot, W. J. Oliver 20.
Fee, Dana & Dana 47.
South Penn Oil, John Jackson 17.
Fee, Wm. C. Kennedy Co. 60.
Fee, South Penn Oil 36.
Bing. 150, South Penn Oil 82.
Fee, Wm. C. Kennedy Co. 61.
Kennedy & Clarke, Phoenix Oil 168.
Bing. 439, South Penn Oil 101.
Bing. 423, South Penn Oil 101.
Bing, 568, Associated Prod. 384.
Bing. 494, South Penn Oil 59.
Bing. 553, South Penn Oil 89.
Bing. 576, South Penn Oil 120.
Bing. 582, Associated Prod. 380.
Bing. 396, Anurus & McDowell 111.
Lawton, Premier Oil 28.
Bing. 490, T. H. Kennedy No. 2, 147.
Rounds, J. W. Kaufman.
Fee, Mix Creek Oil (2 rigs).
Wells Drilling
Whipple, South Penn Oil.
Taylor, Forest Oil (4 wells).
Fisher, Forest Oil (5 wells).
Chamberlain, T. H. Kennedy.
Wilson, Denwood Oil.
Richardson, Hope Oil.
Meehan, A. J. Vantine.
Fee, W. J. Healy.
Boyd, Colt Est.
Booth, R. L. Porter.
Fee, J. H. Gibson.
Devlin, Korner Oil.
Boyd, G. A. Simpson.
Fee, Boyle et al.
Bishop, Kendall Refining.
Wormer, Patton & Wilson.
Porter, Forest Oil.
Middaugh, A. L. & L. M. Lilly (2 wells).
Borden, W. B. Miller (3 wells).
Keating, Sloan & Zook.
Elder, S. H. Elder & Co.
Bingham, J. L. Yerdon.
Wright, Wright & Johnson.
Middaugh, South Penn Oil.
Whipple, South Penn Oil.
Melvin, South Penn Oil (2 wells).
Jones, South Penn Oil (2 wells).
Union Keating, South Penn Oil.
Kendall, South Penn Oil.
Bingham 212, South Penn Oil.
Cotton, Hazelwood Oil.
Borden, T. P. Thompson Jr.
Fee, Kepner Oil.
Rounds, N. V. V. Franchot.
Fee, Penn Oil Products Refg. (3 wells).
Fee, North Branch Oil.
Kuno Kuhu, Davis Oil Corp.
Potter, Burdick & Stover.
Fee, Pollock et al.
Lincoln, H. Smith & Sons.
Garlock, L. H. Smith & Sons (3 wells).
Germer, Linwood Oil.
Canan, P. L. Golden.
Lawton, Esther Oil, Inc., 61.
Lawton, Suhr, McSweeney & Co. 95.
Bing. 386, Hooper & Co. 25.
Bing. 391, George W. Bovlard 87.
Rew, Boviard & Hamlin 37.
Bing. 368, Wilson & Fitzgibbon 13.
Bing. 500, Daly & Healy 37.
Bing. 464, R. S. Pringle 22.
Bing. 369, D. W. Daly 64.
Weston Jr., tr., South Penn Oil 161.
Keating-Fee, South Penn Oil 103.
Keating-Fee, South Penn Oil 102.
Fee, W. E. & W. W. Parmeter.
Kinley Oil, Lewis Schoenfield 8.
Fee, W. E. Williams 20.
Fee, J. V. Golden 25.
Fee, E. Daly 6.
Fee, Park Est. et al. 16.
Fee, L. G. Dana 23.
Fee, Hazelwood Oil 9.
Franchot, E. R. Maxwell et al. 17.
Franchot, Nichols & DeGoller 17.
Lesure, M. R. Williams 2.
Flickinger, C. B. Kervin.
Fee, South Penn Oil.
Fee, South Penn Oil.
Fee, Anna Jane Van Tine 2.
Fee, South Penn Oil.
Bing. Hazelwood Oil 131.
Bing. 453, South Penn Oil 90.
Bing. 150, South Penn Oil 81.
Bing. 151, South Penn Oil 38, 34.
Fee, South Penn Oil 109.
Fee, E. K. Sane 46.
Bing. 378, South Penn Oil.
Bing. 399, South Penn Oil.
Bing 370, Hazelwood Oil 79.
Bing. 482, South Penn Oil 29.
Bing. 583, Associated Prod. 381.
Rumsey, 5, South Penn Oil 130.
Whipple, South Penn Oil 131.
Midland Keating, South Penn Oil 03, 04.
Melvin, South Penn Oil 013, 104.
Hallock & Weston, South Penn Oil 101.
Bing. 151-154, South Penn Oil 38.
Dent, South Penn Oil 109.
Blair, South Penn Oil 011.
Jones, South Penn Oil 223, 224.
Middaugh, South Penn Oil 07.
Bing. 151-154, South Penn Oil 04.
Union Keating, South Penn Oil 76.
Kendall, South Penn Oil 62.
Taylor, South Penn Oil 30.
Smith, South Penn Oil 139.
Bing. 533, South Penn Oil 88.
Bing. 450-474, South Penn Oil 90.
Smith, South Penn Oil 140, 141.
Bing. 212, South Penn Oil 43.
Bing. 416, South Penn Oil 11.
Culbertson lots, South Penn Oil 59.
Cotton, South Penn Oil 56.
Lots 5 and 6, South Penn Oil 02.
Bing. 400 acres, South Penn Oil 81, 82.
Bing. Satt., South Penn Oil 120.
Bing. 377, South Penn Oil 9.
Bing. 533, South Penn Oil 89.
Bing. 369, South Penn Oil 02.
Bing. 501, South Penn Oil 01.
Culbertson lots, South Penn Oil 61.
Tract 21, Hazelwood Oil 01.
Tract 23, Hazelwood Oil 05.
Tract 27, Hazelwood Oil 131.
Rigs, 22; wells drilling, 138; total, 161.

MIDDLE FIELD
Wells Drilling

McWilliams, Johnson Bros.
Irvine, John Bright estate.
Lot 420, Sloan & Zook 49.
Uil Fidelity Petroleum 1.
Wells drilling, 4.

VENANGO-CLARION
Rigs

Irwin, Porter, Hoffman et al. 6.
Hagerty, W. H. Hagerty 2.
Clarion—
Kenemuth, H. F. Kenemuth 1.
Wells Drilling
McNellie, Midland Oil 32.
Craig, Archie E. Fritz 2.
Crystal Springs, Jackson Oil & Gas 9.
Atwell, Hoffman, Craig et al 31.
Edinger, Hovis, Porter et al. 7.
Cassidy, Franklin Trust 7.
Nelson, Goldstein & Nusbaum 14.
Kapp, W. B. & F. E. Kapp 5.
McClintock, F. E. Harsh 14.
Clarion—
Groner, Alum Rock Gas 3.
Criswell, Richland Oil & Gas 4.
Johnston, M. H., G. W. & L. K. Johnston 3.
Wedekind, S. R. Lewis et al. 2.
Garis heirs, Alum Rock Gas 7.
Stewart, Neely & Clover 7.
Rigs, 3; wells drilling, 15; total, 18.

BUTLER-ARMSTRONG
Rigs

McMoran, H. C. Harbison et al. 1.
Schroth, Smith & Co.
Reiger, Reiger & Co. 4.
Leopold, Cypher & Co. 1.
Marshall, R. A. Marshall 1.
Deiter, N. Deiter & Co. 1.
Shroup, Charles Hilderbrand 6.
Smith, Dow Smith et al. 2.
Ritzert heirs, Ritzert Bros. 1.
Rea, Amberson Rea 1.
Boggs heirs, R. C. & W. V. Binkerd.
McKinney, Sutton, Burns et al. 1.
Wells Drilling
Wagner heirs, E. C. Hatcher et al. 3.
Clendennin, Ferguson & Clendenning 3.
Mershon, Nebel & Co. 1.
McBride, Fennell & Co. 2.
Lechner, Lechner, Garing et al. 1.
Zimmel, Seybert Bros. & Holben 1.
Niblock, J. A. Elliott et al. 3.
McCullough, W. M. Ruby et al. 5.
Rahesier, M. Garvin & Co. 2.
Marshall, H. L. Marshall 3.
McKinney, Edward McKinney 4.
Rigs, 12; wells drilling, 11; total, 23.

SOUTHWEST PENNSYLVANIA

Wells Completed
Washington County—
Slieth heirs, Dallmyer 2..... gas
Ahrens heirs, Walters & Co. 2..... dry
Allegheny County—
Weir, George Weir 2..... dry
Beaver County—
Lanz heirs, Harbison & Co. 1..... dry
O'Neill, Abrams & Co. 1..... gas
Greene County—
Wright, Carnegie Gas Co. 2..... 30
Morris, Phil. Gas Co. 1..... gas
White, Mfrs. L. & H. Co. 3..... dry
Hagan, Meals & Co. 6..... gas
Renner, Renner O. & G. Trust 1..... gas
Rutan, Carnegie Gas Co. 5..... 20
T. F. Rutan, N. G. Co. of W. Va. 8..... 10

Wells completed 12
Production 60
Dry 4
Gas 5

WASHINGTON COUNTY
Rigs

Post, A. B. Lewis 1.
Taylor, Carnegie Gas Co. 2.
Wells Drilling
Phillips, Percy Tombaugh 1.
Weir, Carnegie Gas Co. 2.
Craft, N. G. Co. of W. Va. 1.
Cowden, Cowden & Co. 1.
McCalmont, Hickory Penn 1.
Ewing heirs, Hickory Penn 2.
Rankin heirs, Dallmyer & Co. 2.
Russell, Phila. Gas Co. 2.
Miller Bros., McKinney Bros. 1.
Dinsmore, Hickory Penn. 1.
Cowden, Cowden & Co. 2.
Raab, Kauffman & Amon 1.

ALLEGHENY COUNTY
Rigs

Smith, McKinney & Co. 1.
Weir, H. H. Huff 1.
Wells Drilling
Miller, Moore O. & G. Co. 1.
Vunoc-Beher, Moore O. & G. Co. 1.
Robison, McClymons & Co. 1.
Beaver County
Well Drilling
Dawson, Dawson & Co. 4.
GREENE COUNTY
Rigs
Headlee, So. P. O. Co. 3.
Lemley, Carnegie Gas Co. 3.
Fox, Carnegie Gas Co. 1.
Garard, J. L. Garard 7.
Campbell, Boundy Bros. & Co. 1.
A. Rutan, Consumers Fuel Co. 3.
J. Tutan, Consumers Fuel Co. 3.
Wells Drilling
Long, Carnegie Gas Co. 1.
Jones, Carnegie Gas Co. 1.
Henderson, Carnegie Gas Co. 2.
Johns, Carnegie Gas Co. 1.
Bowers, Carnegie Gas Co. 2.
Wright, Carnegie Gas Co. 1.
Henderson, Phila. Gas Co. 1.
Lemley, Moore-Tex O. Co. 1.
E. Lemley, Dunn Mar O. & G. Co. 3.
Fox, Peoples Gas Co. 1.
Clovis, Randall Oil Co. 1.
Hagan, McCracken & Co. 1.
Kiger, Mfrs. L. & H. Co. 2.
Cole, Mfrs. L. & H. Co. 2.
Koen, Johnson & Co. 1.
Smith, N. G. Co. of W. Va. 6.
Whipkey, McCracken & Co. 1.
Morris heirs, Morris O. & G. Co. 1.
Gump, Milliken & Co. 1.
Anderson, Consumers Fuel Co. 5.
J. S. Rutan, Consumers Fuel Co. 4.
Watters, Carnegie Gas Co. 1.
Breeze, Carnegie Gas Co. 1.
Ely, Mfrs. L. & H. Co. 1.
Phillips, Mfrs. L. & H. Co. 1.
Bane, Miller & Co. 1.
Phillips, Sutton & Co. 1.
Huffman, Phila. Oil Co. 2.
Rigs, 11; wells drilling, 44; total, 55.

SOUTHEAST OHIO

Wells Completed
Monroe County—
Dillon, Gold Crown O. & G. Co. 3..... gas
Perry County—
Barns-Rea, Hope C. & R. Co. 1..... 2
Hocking County—
Ruble, Linton & Co. 1..... dry
Dicken, Sure Shot O & G. Co. 1..... dry
Mowery, Griffing Prod. Co. 3..... 20
Linton, Preston Oil Co. 3..... 20
Tracey Est. Kachelmacher Est. 24..... 95
Hase-Harden, Ohio Fuel Supply Co. 1..... 120
Harden, Ohio Fuel Supply Co. 3..... 56
Liff, Preston Oil Co. 1..... 135
Guernsey County—
Fulton, Ohio F. S. Co. 1..... 175
L. J. Fulton, Ohio F. S. Co. 3..... 120
L. J. Fulton, Ohio F. S. Co. 4..... 160
Slabie, Smith & Co. 2..... 180
Ringer, Pure Oil Co. 2..... dry
Gilman, Pure Oil Co. 1..... 40
Vessels, Eastern C. B. Co. 1..... gas
Vincent, Jewell & Co. 1..... 110
Holmes County—
Garver, East Ohio Gas Co. 1..... gas
Galley, East Ohio Gas Co. 1..... gas
Mohler, Kemrow Co. 1..... 8
Steele, Empire G. & F. Co. 2..... 75
Schuler, Burtrum & Co. 2..... 20
Nowells, East Ohio Gas Co. 1..... 60
Patterson, East Ohio Gas Co. 2..... gas
Sandals, Kemrow Co. 1..... gas
Allison, O. F. G. Co. 2..... gas
Allison, Leonard O. & G. Co. 1..... gas
Close, Ohio F. G. Co. 4..... gas
Miller, East Ohio Gas Co. 2..... 25
Franks, East Ohio Gas Co. 2..... 30
Most, Logan Gas Co. 3..... 20
Miller, Ohio F. G. Co. 3..... gas
Nyhart, East Ohio Gas Co. 1..... gas
Lysley, Empire F. & G. Co. 1..... gas
Licking County—
Chaney, Shaffer Est. 9..... 20
Myers, Leonard O. & G. Co. 12..... 10
Hortley, Leonard O. & G. Co. 1..... 1
McKee, Wiggins & Co. 1..... dry
Stone, Ohio F. S. Co. 2..... 3
Brooks, Ohio F. S. Co. 3..... 3
McKinney, North Fork Oil Co. 38..... 3
McKinney, North Fork Oil Co. 39..... 4
McKinney, North Fork Oil Co. 40..... 5
Wolfe, Moore-Adams 7..... 2
Ewter Co. McKee 3..... 105
Haynes, McKee 4..... 100
Rinehart, Margaret Oil Co. 1..... 4
Fish, Fulton Bros. & Co. 1..... 5
Coshocton County—
McKelvey, Empire G. & F. Co. 2..... dry
McMan, East Ohio Gas Co. 2..... gas
Knox County—
Sapp, Upham Gas Co. 1..... gas
Hall, Ark. Fuel O. Co. 4..... 3
Athens County—
Thomas, Glouster O. & G. Co. 1..... 5
Gift, Cooke & Co. 1..... dry
State Lands, Athens State O. & G. Co. 5..... 10
Morgan County—
Riecker, Keller & Co. 1..... dry
Meigs County—
Salser, Pure Oil Co. 2..... 3
Paulin, Pure Oil Co. 2..... gas
Easterday, Ohio F. S. Co. 2..... 8
Heisel, Dailey O. & G. Co. 1..... 2
Genheimer, Barnsly & Frick 1..... 2
Washington County—
Allison, T. E. Keating 6..... 2
Webber, Hope C. & R. Co. 2..... 3
Langdorf, Langdorf & Co. 1..... 1
Heslop, Erb & Co. 1..... dry
Thurman, Ntl. Bank of Marietta 6..... dry
Gitchell hrs., Henderson Oil Co. 5..... 5
Tothley, Webber & Co. 2..... dry
Belmont County—
Christie, Crouch & Co. 1..... 1
Jefferson County—
Collins Bros., Wayne Oil Co. 6..... dry
Smith, Quinn & Co. 3..... 1
Kellermier, Turner O. & Co. 8..... 1
Carroll County—
Harding, Eaton & Co. 4..... 15

Wells completed 74
Production 1804
Dry 11
Gas 15

MONROE COUNTY
Well Drilling
Straight, Amer. O. & G. Co. 1.
PERRY COUNTY
Rig
Hutchinson, Hutchinson O. & G. Co. 1.
Wells Drilling
Ream, Hope C. & R. Co. 1.
McCune, Hope C. & R. Co. 1.
HOCKING COUNTY
Rigs
Marks, Preston Oil Co. 4.
Hardin, Lime Light O. & G. Co. 1.
Tucker, Griffin Prod. Co. 1.
Price, Preston Oil Co. 8.
Harriell, Goldes Rod Oil Co. 2.
Tracey Est. Kachelmacher Est. 24.
Wells Drilling
Thrush, Gordon Oil Co. 4. 5.
Kitchen, Gordon Oil Co. 3.
Lick Run C. & C. Co. Glendale Oil Co. 1.
Leslie, Pure Oil Co. 4.
H. V. P. Co. Chartiers Oil Co. 204.
Pummell, Cohen & Co. 1.
Tritch, Hope C. & R. Co. 7.
Marks, Preston Oil Co. 1.
GUERNSEY COUNTY
Rigs
Fulton, Ohio F. S. Co. 4, 6.
L. J. Fulton, Ohio F. S. Co. 2.
McCullough, Pure Oil Co. 1.
Ruby, Eastern C. B. Co. 1.
Cambridge City, Ohio F. S. Co. 1.
Wells Drilling
Dedick, Wiser Oil Co. 1.
J. R Fulton, Ohio F. S. Co. 3, 5.
L. J. Fulton, Ohio F. S. Co. 1.
Jo. M. Fulton, Ohio F. S. Co. 1.
Slabie, Smith & Co. 3.
Cox, Smith & Co. 1.
Chapman, Pure Oil Co. 2.
White, Pure Oil Co. 1.
Martin, Leonard O. & G. Co. 1.
McCullough, Eastern C. B. Co. 1.
Black, Ohio F. S. Co. 1.
Ewers, Jewell & Co. 1.
HOLMES COUNTY
Rigs
Allison, East Ohio Gas Co. 2.
Purdy, Leonard O. & G. Co. 4.
Netherow, Empire G. & F. Co. 5.
Close, Empire G. & F. Co. 4.
Tidball, Kemrow Co. 2.
Kendall, Pure Oil Co. 3.
Wells Drilling
Middaugh, East Ohio Gas Co. 2.
Fites, Kemrow Co. 2.
Smitheiser, Ohio Oil Co. 4.
Netherow, Empire G. & F. Co. 4.
Schuler, Palmer & Co. 2.
Conn, Kemrow Co. 2.
Miller, East Ohio Gas Co. 3.
Uhl, East Ohio Gas Co. 5.
Hastings, East Ohio Gas Co. 3.
Snider, Pure Oil Co. 3.
Miller, Logan Gas Co. 1.
Keyser hrs., Reno Oil Co. 3.
LICKING COUNTY
Rigs
Phillips, Crampton Oil Co. 1.
F. Phillips, Hope C. & R. Co. 5.
Hickey, Pure Oil Co. 2.
Wells Drilling
Gault, Mead & Co. 1.
Dustheimer, Smith & Hazlett, 4.
Jones, Hope C. & R. Co. 1.
Ensworthy, Pure Oil Co. 1.
Coonus, Sale & Co. 3.
Swiger, Eataw Co. 2.
COSHOCTON COUNTY
Rigs
McKee, Spindler Donlan & Co. 4.
Miller, Logan Gas Co. 3.
Wells Drilling
Young, Leonard O. & G. Co. 1.
Lapley, Empire G. & F. Co. 2.
Grant, Ohio F. G. Co. 1.
Humphrey, East Ohio Gas Co. 1.
KNOX COUNTY
Wells Drilling
Workman, Upham Gas Co. 1.
Carson, Carson & Co. 4.
Phillips, Corporation Oil Co. 2.
NOBLE COUNTY
Wells Drilling
Way, W. & N. C. G. Co. 1.
Mallett, Smith & Co. 1.
VINTON COUNTY
Well Drilling
Carlow, Varlon Oil Co. 1.
ATHENS COUNTY
Wells Drilling
Fagan, Wehrle Bros. 1.
Casado, Rousehausen & Co. 1.
Childrens Home, Home Oil Co. 2.
Biddle hrs. Biddle O. & G. Co. 7.
MEIGS COUNTY
Rig
Capehart, Penna. Berea Co. 3.
Wells Drilling
Young, Pure Oil Co. 1.

Rasp, Ohio F. S. Co. 1.
Easterday, Ohio F. S. Co. 3.
Brewer, H. B. Godard, 1.

WASHINGTON COUNTY
Rig
Thurman, N'tl. Bank, 7.
Wells Drilling
Henselman, Lauderback Oil Co. 1.
Holland, Bentz Oil Co. 1.
Reed, Root & Co. 4.
Bell, Patterson & Co. 3.
Williams, Carner & Co. 2, 4.
Palmer, Wells & Schram 1.
Hupp, Jerry Buckley 1.

BELMONT COUNTY
Well Drilling
Rehm, Dollar Savings Bank 2.

CARROLL COUNTY
Wells Drilling
Harrington, N. G. Co. of W. Va. 2.
Dorrance hrs., Brown, Vorhees & Co. 1.
Rigs, 26; wells drilling, 73; total, 99.

WEST VIRGINIA
WELLS COMPLETED

Upshur County—
Hammer, French O. & G. Co. 1..... gas
Harrison County—
Sullivan, Hope C. & R. Co. 1..... gas
Marion County—
Tennant, M. Tennant 2 15
Billingsby, Hope Gas Co. 1 ..... dry
Straight, Owens B. & M. Co. 1..... dry
Hibbs, Carnegie Gas Co. 5 10
Furbee, Hope Gas Co. 3 ..... gas
Monongalia County—
Core, Phila. Oil Co. 1 ..... dry
Wright, Swatika G. & G. Co. 1 ..... gas
Wetzel and Tyler Counties—
McIntyre, Alvy O. & G. Co. 3 ..... gas
Burley & Co., Silver Hill Oil Co. 3 ..... dry
Mills, Richwood Oil Co. 14 5
Marshall County—
Evans, Mfrs. L. & H. Co., 1 ..... gas
Doddridge County—
Fletcher, So. P. O. Co. 1..... 15
Maxwell, J. E. Trainer 2 ..... gas
Robinson, J. B. Travis 1 8
Ahouse, Carnegie Gas Co. 3 ..... gas
Ritchie County—
Snyder, Young & Co. 1 ..... gas
W. Va. Tract, R. G. Wiles 6 1
Lewis, So. P. O. Co. 2 6
Wilson, So. P. O. Co. 8 10
Mullinax, Reno Oil Co. 3 2
Scott, Cedar Run O. & G. Co. 2 ..... gas
Lewis, Hope Gas & R. Co. 1..... gas
Miller heirs, Glass & Co. 1 ..... dry
Goodwin, Victory Oil Co. 1 ..... dry
Clay County—
Stockly, So. P. O. Co. 52 20
Parker, So. P. O. Co. 6 5
Reed & Co., Ohio Fuel Oil Co. 4 20
Brown & Co., Virginian G. & O. Co. 19 5
Hively School Lot, Stephenson Oil Co. 1 20
Stockly, So. P. O. Co. 50 55
Stockly, So. P. O. Co. 51 50
Parker, So. P. O. Co. 5 10
Casto, Virginian G. & O. Co. 15..... 25
Lockhart, Virginian G. & O. Co. 6..... 35
Lockhart, Virginian G. & O. Co. 7 10
Brown & Co., Virginian G. & O. Co. 5... 5
Brown, Virginian G. & O. Co. 1 10
Samples, Empire Pet. Co. 4 ..... gas
Gilmer County—
Simmers, Morgan & Co. 1 ..... gas
Braxton County—
McCumbers, Pgh. & W. Va. Gas Co. 1.. gas
Rollyson, Pgh. & W. Va. Gas Co. 1.... dry
Hall, Ohio Fuel Oil Co. 1 ..... gas
Wade, Ohio Fuel Oil Co. 1 ..... gas
Wood County—
Reed & Co. 2 ..... dry
Compton, Maloney & Ekas 3 ..... dry
Kirsch, Richard Oil Co. 1 ..... dry
Snyder, Pleasant Hill Gas Co. 3 3
Pleasants County—
Phelps, Phelps Farm Oil Co. 1 ..... dry
McTaggart, Hammett & Co. 1 ..... dry
Templeton, Amber Oil Co. 3 5
Roane County—
Connolly, Heck Oil Co. 7..... 5
Conolly, Heck Oil Co. 8 10
McVey, Heck Oil Co. 1 12
Burch, Edward Boehm 1 ..... dry
Saylers, Noble Beattie 1 2
Smith heirs, Noble Beattie 1 2
Canterberry, Young 1 ..... gas
Calhoun County—
Cunningham, Crowley & Co. 1 ..... dry
Gainer, U. F. G. Co. 1 ..... gas
Kelley, McIntosh & Scott 1 ..... gas
M. E. Kelley, E. B. Lewis & Co. 1 .... gas
Barbour County—
Morris, Grasselli Chem. Co. 1..... gas
Lincoln County—
Sweetland, Col. G. & E. Co. 432 ..... gas
Kanawha County—
Cambridge Gas Co. 1 ..... gas
Pauley, Ohio Fuel Oil Co. 2 ..... gas
Brown, Virginia G. & O. Co. 17 2
Goshorn heirs, Walker Oil Co. 59 1
Boone County—
Federal Coal Co., Pure Oil Co. 14 ..... gas
Federal Coal Co., Pure Oil Co. 15 ..... gas
Chambers, Owens B. & M. Co. 2 ..... gas
C. R. M. Co., Owens B. & M. Co. 32... dry
Horse C. & L. Co., U. F. Gas Co. 1 ..... gas
Mingo County
Closterman estate, Old Colony Oil Co. 13 dry
Mason County—
Jordon, Hays & Co. 1 ..... dry
Putnam County—
Chapman, Ellis & Adkins 2 ..... gas

Wells completed	77
Production	145
Dry	16
Gas	29

UPSHUR COUNTY
Rig
McCue, Taylor & Cavender 1.

LEWIS COUNTY
Well Drilling
Krause, Krause Bros. 1.

HARRISON COUNTY
Wells Drilling
Smith Bros., Reserve Gas Co. 1.
Martin, Hope C. & R. Co. 1.

MARION COUNTY
Wells Drilling
Metz, F. N. Elliott 2.
Tennant, Hope Gas Co. 1.
Arnett, C. L. Morris 1.
L. Arnett, Carnegie Gas Co. 1.

MONONGALIA COUNTY
Wells Drilling
Yost, Mfrs. L. & H. Co. 2.
Dulaney heirs, Mfrs. L. & H. Co. 2.
Core, Tennant O. & G. Co. 1.
White, Randall Gas Co. 1.
Wright, Swatika O. & G. Co. 1.
Tennant, So. P. O. Co. 5.

WETZEL & TYLER COUNTIES
Rigs
Wade, Carnegie Gas Co. 1.
Burley, Johns Gas Co. 1.
Lemaster, Mfrs. L. & H. Co. 1.
Eddy, McIntyre Bros. O. Co. 1.
Wells Drilling
Long, Carnegie Gas Co. 1.
Ritter, Hope C. & R. Co. 1.
Burch, Hope C. & R. Co. 1.
Kyle heirs, J. A. Penz 1.
Morgan, Carr Bros. 1.
Burley, Silver Hill Oil Co. 4.
Price, Shimwell, Mfrs. L. & G. Co. 1.

MARSHALL COUNTY
Rigs
Campbell, Denver O. & G. Co. 1.
Jochum, Spider O. & G. Co. 1.
Campbell heirs, Decem Dev. Co. 5.
Howard, Mfrs. L. & H. Co. 3.
Pyles & Co., Mfrs. L. & H. Co. 2.
Marple, Mfrs. L. & H. Co. 2.
Cole, Carnegie Gas Co. 2.
Wells Drilling
Newman, Wood & Co. 1.
Reid, Mfrs. L. & H. Co. 2.
Howard heirs, Mfrs. L. & H. Co. 3.

HANCOCK COUNTY
Well Drilling
Grago, J. McIntosh 1.

DODDRIDGE COUNTY
Wells Drilling
Stuttler, W. D. Gribble 1.
Ford, Barber Gas Co. 1.
Fletche, So. P. O. Co. 5.
Stewart, Mfrs. L. & H. Co. 1.
Ahouse, Mfrs. L. & H. Co. 1.

RITCHIE COUNTY
Rigs
Haught, Haught & Co. 1.
W. Va. Tract, Whitwood Oil Co. 29.
Swisher, Feem & Co. 3.
Mason, Mason Farm Oil Co. 3.
Ridgeway, Continental Oil Co. 4.
Wells Drilling
McCosh heirs, Wilken & Co. 1.
Ryan, Southern Oil Co. 8.
Richards, Hope Gas Co. 1.
Collins, Hope Gas Co. 1.
Ingram, Rinehart & Co. 1.
J. Ingram, Rinehart & Co. 1.
Bradford, Rico O. & G. Co. 3.
Whaley, Morgan & Co. 1.
Flesher, Little Flower Gas Co. 1.
Nutter, Higa & Co. 1.
McGregor heirs, Cochrane & Haas 2.

CLAY COUNTY
Rigs
Stockly, So. P. O. Co. 54, 55.
Kyle, So. P. O. Co. 11.
Lockhart, Virginian G. & O. Co. 10.
Brown & Co., Virginian G. & O. Co. 21.
Brown & Co., Virginian G. & O. Co. 6.
Brown & Co., Virginian G. & O. Co. 2.
Summers, Virginian G. & O. Co. 2.
Wells Drilling
Stockly, So. P. O. Co. 53, 56.
Casto, Virginian G. & O. Co. 16.
L. Casto, Virginian G. & O. Co. 17.
Lockhart, Virginian G. & O. Co. 8, 9.
Brown, Virginian G. & O. Co. 20.
Brown, Virginian G. & O. Co. 1.
Brown, Virginian G. & O. Co. 2.
Davenport, Ohio Fuel Oil Co. 2.

GILMER COUNTY
Rig
Tierney, James Tierney 3.
Well Drilling
Beall, Roberts & Co. 1.

WOOD COUNTY
Rigs
McPeak, So. P. O. Co. 11.
McCracken, Davyman & Co. 3.
Wells Drilling
Roberts heirs, Hope C. & R. Co. 1.
Allman, So. P. O. Co. 15.
Pope, E. E. Pope 8.
Upton, T. Connolly 1.
Vaughn, S. L. Anderson 1.

PLEASANTS COUNTY
Rig
Dennis, L. C. White 1.
Wells Drilling
Cramblett, Wiser Oil Co. 1.
Hammett heirs, Faith O. & G. Co. 5.
A. V. Hammett, Bickel & Sons 4.

ROANE COUNTY
Wells Drilling
Tallman, Heck Oil Co. 1.
Connolly, Heck Oil Co. 5.
White, King O. & G. Co. 1.
Lewis, U. F. G. Co. 3.
Roberts & Pell, Federal O. & G. Co. 37.

CALHOUN COUNTY
Rigs
Berry, M. F. Crowley 3.
Dewees, Hope C. & R. Co. 2.
Wells Drilling
Cain, T. Crowley 1.
Knight, Hope C. & R. Co. 1.
Parsons, Hope C. & R. Co. 2.
Francis & Gainer, White Pipe O. & G. Co. 1.
Ayers, White Pine O. & G. Co. 1.

LINCOLN COUNTY
Rigs
Sweetland, Col. G. & E. Co. 1.
Alderson, E. P. Cameron 6, 7.
Sias, Roy & McComas 3.
Wells Drilling
Linville, Hope Gas Co. 1.
Alderson, E. P. Cameron 4, 5.
Porter, Huntington G. & Dev. Co. 293.
Birs, Wolfe & Co. 1.
Gillenwater, Meabon & Huffman 7.

KANAWHA COUNTY
Rig
White, Snyder & Co. 1.
Well Drilling
Kennedy heirs, United Arbon Co. 7.

BOONE COUNTY
Rig
Goldberg, So. P. O. Co. 1.
Wells Drilling
Williams Coal Co., Pure Oil Co. 229, 230, 231.
Federal Coal Co., Pure Oil Co., 8, 9, 11, 19.
L. P. & R., Pure Oil Co. 28.
L. P. R. Co., Tract B, Pure Oil Co. 18.
Cassingham & Co., Owens B. & M. Co. 13.
Bedford, Owens B. & M. Co. 12.
Anderson, Owens B. & M. Co. 2.
H. C. C. & L. Co., U. F. G. Co. 8.
Arbogast, G. L. Cabot 2.
Federal Coal Co., G. L. Cabot 17.

CABELL COUNTY
Wells Drilling
Nichols, Monickel Gas Co. 1.
Moore, Aetna O. & G. Co. 1.
Martin, Midway City Gas Co. 1.

MINGO COUNTY
Well Drilling
L. C. C. Co., Old Colony O. & G. Co. 24.

WAYNE COUNTY
Well Drilling
Caldwell, Old Colony O. & G. Co. 2.

PUTNAM COUNTY
Well Drilling
Bird, So. P. O. Co. 1.
Rigs, 34; wells drilling, 94; total, 128.

LIMA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	6	53	0	0	3	4	7
Hancock	2	3	1	0	0	3	3
Allen	0	0	0	0	0	1	1
Auglaize	2	5	1	0	0	4	4
Sandusky	2	11	0	0	0	3	3
Mercer	3	11	0	0	0	1	1
Van Wert	0	0	0	0	0	2	2
Seneca	1	40	0	0	1	1	2
Lucas	1	0	0	1	0	2	2
Ottawa	3	34	0	0	0	3	3
Shelby	1	5	0	0	1	3	4
Hardin	0	0	0	0	0	3	3
Darke	0	0	0	0	0	4	4
Paulding	0	0	0	0	2	0	2
Total Mar....	21	162	2	1	7	34	41
Total Feb....	19	167	1	0	3	30	33
Difference...	2	5	1	1	4	4	8

WELLS COMPLETED
WOOD COUNTY
Bloom—E. Shanaberger, The Ohio Oil 47 10
Liberty—Orpha J. Walden, Walden & Evans 2 3
Perrysburg—Alexander Beard, Oko Oil & Gas 7 7
H. Lindenmier, Oko Oil & Gas 9 17
Troy—J. F. Haar, G. H. Blausey 6 ... 5
Webster—Charles Gelden, John Gelden & Co. 6 11

Wells completed	6
Production	53

HANCOCK COUNTY
Marion—George Snyder, George Snyder 1 ..... dry
Liberty—J. E. King lot, J. E. King & Co. 1 3

Wells completed	2
Production	3
Dry	1

AUGLAIZE COUNTY
Moulton—J. H. Harshbarger, H. F. Kelly & Co. 3 ..... dry
Noble—M. Welter, J. L. Fee 1 5

Wells completed	2
Production	5
Dry	1

SANDUSKY COUNTY
Woodville—Louis Hille, Louis Hille 4.. 5
Washington—J. H. Myers, The Ohio Oil 9 6
Anna Diels, The Ohio Oil 7 ..... abd
Sandusky—Mrs. D. Hensel, The Ohio Oil Co. 11 ..... abd

Wells completed	2
Production	11
Abandoned	2

MERCER COUNTY
Hopewell—M. Hellworth, June Oil Co. 1. 1
Center—Dayton Fest, R. C. Grace 2 .. 5
John Fisher, Edward Anderson 2 .. 5
Union—James Clover, Stelzer & McClure 1 ..... abd
Dan Davies, Michael J. Haely & Co. 8 ..... abd
Lavine Winger, Michael J. Haely & Co. 1 ..... abd

Wells completed	3
Production	11
Abandoned	3

VAN WERT COUNTY
Dublin—J. A. Pulskamp, Elizabeth Oil 1, 2, 3, 4 ..... abd
Abandoned 4

SENECA COUNTY
Liberty—Dave Hunker, J. H. Murphy & Son 2 40

LUCAS COUNTY
Waterville—H. C. King, Waterville Gas & Oil 1 ..... gas

OTTAWA COUNTY
Harris—F. H. Dischinger, Onsel Bros. & Co. 8 11
D. Nellis, Sugar Creek Oil 2 3
Catawba—Catawba Orchards, Catawba Oil & Gas 2 20

Wells completed	3
Production	34

SHELBY COUNTY
Cynthian—Theresa Goffena, The Ohio Oil 5 7

WOOD COUNTY
Rigs
Liberty—Eli Stockwell, Mattie S. Rouse & Co. 23.
E. A. Judson, Hulse & Kunditz 2.
Lake—Otto Brim, Charles F. Zeising & Co. 2.
Wells Drilling
Bloom—R. A. Hughes, Helena L. Hughes 6.
Perrysburg—Alexander Beard, Oko Oil & Gas 8.
Webster—Charles Gelden, John Gelden & Co. 7.
William Roller, Ray Oil 3.
Rigs, 3; wells drilling, 4; total, 7.

HANCOCK COUNTY
Wells Drilling
Portage—Isaac Hart, Mathias Bros. 12.
Eagle—Henry Deeds, B. Porter & Co. 20.
Biglick—H. Roberts, R. W. Kirk & Co. 1.
Wells drilling, 3.

ALLEN COUNTY
Well Drilling
Bath—P. D. Driver, O. T. Botkins & Co. 6.

AUGLAIZE COUNTY
Wells Drilling
Washington—William Wibber, Grover Lynch & Co. 1.
H. O. Koch, Brookside Oil & Gas 4.
John Kogge, Campbell & Co. 1.
Douchouquet—C. Vossler, Vossler & Co. 5.
Wells drilling, 4.

SANDUSKY COUNTY
Wells Drilling
Woodville—W. B. Bruns, The Ohio Oil 1.
F. Dischinger, The Ohio Oil 1.
Jackson—W. A. Heyman, Milton J. Beaty 1.
Wells drilling, 3.

MERCER COUNTY
Wells Drilling
Center—Dayton Fast, R. C. Grace 3.

VAN WERT COUNTY
Wells Drilling
Liberty—John Chilcote, Chilcote Oil & Gas 3.
Butler—William Wiley, L. J. Lantz 3.
Wells drilling, 2.

SENECA COUNTY
Rig
Jackson—Mary E. Steinbrook, Onsel Bros. & Co. 7.
Well Drilling
Eden—Frank Funk, Great Northern Oil 1.
Rig, 1; well drilling, 1; total, 2.

LUCAS COUNTY
Wells Drilling
Oregon—R. A. Bartley, Fred Keister 10.
Monclova—W. F. Black, L. W. Vermyle 2.
Wells drilling, 2.

OTTAWA COUNTY
Harris—Gust Magsig, Burman Oil 3.
Salem—August Vogel, Oak Harbor Natural Gas 1.
Danbury—Fred Block, The Ohio Oil 1.
Wells drilling, 3.

SHELBY COUNTY
Rig
Laramie—J. H. Borhorst, Lee A. Watson 2.
Wells Drilling
Cynthian—N. A. Paulus, Eilerman Oil 2.
J. A. Barhorst, Lee A. Watson 2.
McLean—J. Ernst, L. T. McGrath 4.
Rig, 1; wells drilling, 3; total, 4.

HARDIN COUNTY
Wells Drilling
McDonel—Earl Hites, H. E. Schmidt 4.
A. R. Zimmerman, Hardin Oil & Gas 9.
Washington—Robert Patterson, Forest Oil & Gas 1.
Wells drilling, 3.

DARKE COUNTY
Wells Drilling
Mississinewa—Oscar J. Current, A. W. Neely & Co. 3.
S. V. Ainsworth, R. D. Hance 1.
John E. Schwartz, Illindo Oil 6.
Allen—G. L. Toman, Hance & Hoffman 5.
Wells drilling, 4.

PAULDING COUNTY
Rigs
Harrison—C. Springer, John T. Schunck 5.
A. M. Bailey, U. S. A. Oil 6.
Rigs, 2.

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Knox	3	0	1	2	0	4	4
Ashland	1	0	0	1	2	3	5
Medina	2	0	0	2	2	2	4
Lorain	0	0	0	0	0	2	2
Wayne	4	0	3	1	2	1	3
Holmes	12	415	1	3	3	12	18
Athens	1	0	1	0	0	8	8
Coshocton	1	0	1	0	0	4	4
Cuyahoga	8	0	2	6	2	10	12
Jackson	0	0	0	0	0	1	1
Summitt	1	0	0	1	1	0	1
Total Mar....	33	415	9	16	12	47	59
Total Feb....	34	401	7	19	13	61	74
Difference...	1	14	2	3	1	14	15

Wells Completed
KNOX COUNTY
Jefferson—James Temple, East Ohio Gas 1 ..... dry
Thomas McMahon, Ohio Fuel Gas 1 . gas
George W. Sapp, Upham Gas 1 .... gas

Wells completed	3
Dry	1
Gas	2

ASHLAND COUNTY
Clear Creek—Ray Shaw, Ringler & Co. 1 ..... gas

MEDINA COUNTY
Liverpool—W. A. Law, Chemical Oil & Gas 1 ..... gas
Medina—C. L. White, Empire Gas & Fuel 1 ..... gas

Wells completed	2
Gas	2

WAYNE COUNTY
Chippewa—H. C. Hollinger, Westheiffer & Winger 2 ..... dry
Paint—Pauline B. Becker, Logan Gas 1. dry
Congress—C. W. Keener, Glen Harmon & Co. 2 ..... gas
Chester—P. Firestone, The Kemrow Oil 1 ..... dry

Wells completed	4
Dry	2
Gas	1

HOLMES COUNTY
Hardy—Etta J. Nowells, East Ohio Gas 1 100
George Schuller, Burton & Morgan 2 . 85
Monroe—Oscar Steele, Empire Gas & Fuel 2 75
O. M. Smithisler, The Ohio Oil 4 ... gas
Prairie—Scott V. Mast, Logan Gas 3 .. 45
Kilbuck—F. and L. Garver, East Ohio Gas 1 ..... gas
Frank Galley, East Ohio Gas 1 .... gas
Byron Middaugh 19, East Ohio Gas 2 30
A. E. Patterson, East Ohio Gas Co. 2. 10
L. B. Mohler, The Kemrow Co. 1 ... 55
Richland—Drusilla Kyser, The Reno Oil 1 15
Drusilla Kyser, The Reno Oil 2 .... dry

Wells completed	12
Production	4
Dry	1
Gas	3

ATHENS COUNTY
Carthage—Ida B. Davis, Hendricks & Co. 1 ..... dry

COSHOCTON COUNTY
Monroe—James A. Markley, Logan Gas 1 ..... dry

CUYAHOGA COUNTY
Dover—Kroehler & Co., Arthur & Simpson 1 ..... gas
A. E. Guage, Arthur & Simpson 1 .. gas
F. Clausen, Hulse & Kundtz 1 .... gas
J. A. K. Ballasch, Hulse & Kundtz 1. dry
Walter E. Elliott, Logan Gas 2 .... gas
Ellen Smith, Logan Gas 1 ..... gas
Kinkler, Dempsey & Daugherty 1 .. gas
Olmstead—F. K. Biddulph, Simpson & Co. 1 ..... dry

Wells completed 8
Dry 2
Gas 6

SUMMITT COUNTY
Richfield—J. B. Kirby, East Ohio Gas 1. gas

KNOX COUNTY
Wells Drilling
Jefferson—C. F. Stout, East Ohio Gas 1.
Clay—B. F. Baird, Logan Gas 7.
A. Larason, Davidson & Bell Bros. 7.
Brown—Phil Bross, Upham Gas 3.
Wells drilling, 4.

ASHLAND COUNTY
Rigs
Orange—D. A. and L. R. Shively, Logan Gas 1.
Sullivan—L. S. Spencer, Ohio Fuel Gas 1.
Wells Drilling
Hanover—J. H. Miller, East Ohio Gas 3.
Sullivan—W. J. Harvinot, Logan Gas 1.
Jackson—Catherine Findlay, Bert Cameron 1.
Rigs, 2; wells drilling, 5; total, 5.

MEDINA COUNTY
Rigs
Lafayette—Atlas J. House, Daugherty Bros. 2.
Median—Charles C. Wilbur, Empire Gas & Fuel 1.
Wells Drilling
Lafayette—Derhammer & Dorr, Ohio Fuel Gas 1.
Charles R. Puchhas, Empire Gas & Fuel 2.
Rigs, 2; wells drilling, 2; total, 4.

LORAIN COUNTY
Penfield—J. F. Worcester, Hawk & Co. 1.
Eaton—H. M. Howard, Wiser Oil 1.
Wells drilling, 2.

WAYNE COUNTY
Rigs
Chester—Catherine Funk, Ohio Fuel Gas 3.
Milton—John Bauman, East Ohio Gas 1.
Well Drilling
Cannan—Daniel Wiles, Butler Bros. 4.
Rigs, 2; wells drilling, 1; total, 3.

HOLMES COUNTY
Rigs
Hardy—Jesse P. Close, Empire Gas & Fuel 4.
Degler heirs, Empire Gas & Fuel 1.
Kilbuck—C. P. and L. Allison, East Ohio Gas 2.
Wells Drilling
Hardy—J. E. Miller, East Ohio Gas 3.
Jacob Uhl, East Ohio Gas 5.
John R. Hastings, East Ohio Gas 3.
Delpha Nethrow, Empire Gas & Fuel 3, 5.
George Schuler, Warren Palmer & Co. 2.
Salt Creek—Adam Karch, Empire Gas & Fuel 1.
Paint—James P. Miller, Logan Gas 1.
Knox—Catherine Kaylor, I. E. O'Hail 1.
Kilbuck—Byron A. J. Middaugh 18, East Ohio Gas 2.
Albert C. Fites, The Kemrow Co. 2.
Richland—Drusilla Kyser, The Reno Oil 3.
Rigs, 3; wells drilling, 12; total, 15.

ATHENS COUNTY
Carthage—C. E. Bradford, Goddard & Cunningham 1.
Oliver Davis, Hawkins & Co. 1.
Eliza Dunlavey, Ohio Fuel Gas 1.
S. S. Hoffman, Ohio Fuel Supply 1.
G. D. Swartz, Cooper & Co. 3.
J. W. Barnhill, Logan Gas 4.
J. L. Varner, Fairfield Gas 3.
Waterloo—Lafayette Hewitt, Guenther & Co. 2.
Wells drilling, 8.

COSHOCTON COUNTY
Wells Drilling
Tiverton—C. E. Humphries, East Ohio Gas 1.
Newcastle—Cassingham, Cassingham & Bell Bros. 18.
Monroe—Jonathan Gant, Ohio Fuel Gas 1.
Peter Lepley, Empire Gas & Fuel 2.
Wells drilling, 4.

CUYAHOGA COUNTY
Rigs
Dover—Emma Vail, Wiser Oil 1.
Strongville—George Zeig, Dillon & McFrederick 1.
Wells Drilling
Dover—J. Gregory, Arthur & Simpson 1.
C. L. Harrison, Arthur & Simpson 1.
H. Martin, Arthur & Simpson 2.
Cheskie, McGrath & Co. 1.
M. Lippers, Hulse & Kundtz 1.
E. Linpert, Hulse & Kundtz 1.
G. L. Cooley, Hulse & Kundtz 1.
H. L. Rutherford, Logan Gas 1.
C. Jenkins, Wiser Oil 1.
G. W. Jenkins, Wiser Oil 2.
Rigs, 2; wells drilling, 10; total, 12.

JACKSON COUNTY
Well Drilling
Franklin—W. L. Kennison, Logan Gas 2.

SUMMITT COUNTY
Rig
Franklin—Jacob and Emma Boettler, F. A. Brendal & Co. 1.

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Saginaw	24	860	1	17	27	44
Alcona	0	0	0	0	1	1
Total Mar.	24	860	1	17	28	45
Total Feb.	22	350	3	12	40	52
Difference	2	510	2	5	12	7

WELLS COMPLETED
SAGINAW COUNTY
Saginaw—Ferdinand Stelzreide, Sun Oil 1 350
John Stelzreide, Sun Oil 2 20
Adam Neurminger, Sun Oil 2 20
George Griebel, Saginaw Prospecting 1 20
Nicholas Pappas, Saginaw Prospecting 1 20
Kline, Fox & Co., Saginaw Prospecting 1 20
Deindorfer Woods, Saginaw Prospecting 4 25
J. Draper Estate, Saginaw Prospecting 1 20
C. E. Sperling, Schwinck Oil 1 20
Packing House, Schwinck Oil 2 20
Foot State Street, Local Oil 1 50
Nowak-Nelson, Fordney Pet. 1 20
Ace Ball Park, Fordney Pet. 2 35
Polin-Madison, Fordney Pet. 1 30
Art Baumler, Cross Pet. 1 20
Burdow, Edward Burdow & Co. 1 20
Clark & Schafer St's., J. & S. Dev. 1. 25
Whittier, Wells-Schmidt Co. 3 20
Mershon-Eddy-Parker, The Ohio Oil 4 25
C. H. Spickerman, Wayco Oil 1 25
J. C. Reed, K. & M. Oil 1 20
Barbara Myers, G. & W. Oil 1 25
William Hagel, Bacon Pet. 1 10
Taymouth—Sam Cedar, S. M. Bacon & Co. 1 ..... dry

Wells completed 24
Production 860
Dry 1

SAGINAW COUNTY
Rigs
Saginaw—Dr. D. E. Bradshaw, Sun Oil 3.
George Kuck, Sun Oil 1.
William Seidele, Sun Oil 1.
Henry Deibel, Sun Oil 1.
J. W. Weiss, Sun Oil 3.
John Stelzreide & Co., Sun Oil 1.
Deindorfer Woods, Saginaw Prospecting 5.
Northmoor, Saginaw Prospecting 3.
George Deindorfer, Saginaw Prospecting 4.
Ash & Schaefer Sts., Cross Pet. 1.
C. R. Phillips, Barker Oil & Gas 1.
Mrs. Carrie Reed, V. M. Vorhees & Co. 1.
Casper Ulrich, Bliss Pet. 6.
John Schoenteir, Sun Co. 7.
Cuthbertson, Saval Dev. 1.
Bennett-Fisher, West Virginia Oil & Gas 1.
Spaulding—Thomas Holhan, Chas. Hunt 1.
Wells Drilling
Saginaw—John Schoentelt, Sun Oil 6.
Rabe, Sun Oil 2.
Louis Voight, Sun Oil 2.
Northmoor, Saginaw Prospecting 2.
Mershon Vinyard, Saginaw Prospecting 2.
Fred Engel, Bliss Pet. 2.
Edward Engel, Bliss Pet. 1.
Strable, Strable Salt & Lumber 1.
Palmer, Wells-Schmidt Co. 1.
Oakley Street, The Ohio Oil 1.
John Sliva, K. & M. Oil 1.
Flack, Fordney Pet. 1.
Oakley & Reed Sts., Fordney Pet. 1.
Glen Gardner, Fordney Pet. 1.
Fred H. Kline & Co., Cross Pet. 1.
Clarence Clark, W. M. Bradley & Son 1.
George Bishop, K. & M. Oil 1.
John Bretchelsbauer, J. H. Shaltry & Co. 2.
Palmer, Atlas Oil 2.
Albert E. Pelkey, Superior Oil 1.
F. Chesbrough & Co., Crescent Oil 1.
Fisher, Ohio Fuel Corp. 4.
Eddy & Ash Sts., James Cooper & Co. 1.
Pleasants & Oakley Sts., H. W. Schalberger & Co. 1.
Birch Run—Pat Sauve, J. F. Marchard 1.
Buena Vista—Charles H. Kretchmer, Saval Dev. 1.
Taymouth—George Judd, S. M. Bacon & Co. 1.
Rigs, 17; wells drilling, 27; total, 44.

ALCONA COUNTY
Well Drilling
Haynes—Section 22, Alcona Prospecting 1.

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	3	81	0	0	0	4	4
Crawford	4	34	1	0	0	5	5
Lawrence	3	28	0	0	0	3	3
Wabash	3	83	1	0	2	11	13
Clinton	0	0	0	0	0	1	1
Madison	0	0	0	0	0	2	2
Macon	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Coles	0	0	0	0	0	1	1
Total Mar.	13	226	2	0	2	29	31
Total Feb.	4	180	0	2	5	28	33
Difference	9	46	2	2	3	1	2

Wells Completed
CLARK COUNTY
Casey—Wheeler Baker, W. C. Turner & Co. 3 40
James Rush, W. C. McBride, Inc., 27. 37
A. F. Lennox, D. C. Davis 22 4

Wells completed 3
Production 81

CRAWFORD COUNTY
Honey Creek—Randolph Weger, Craig, Lowrie & Co. 12 8
Montgomery—L. N. Tohill, American Development 6 6
J. H. Armstrong, Dill & Co. 1 ..... dry

Wells completed 4
Production 34
Dry 1

LAWRENCE COUNTY
Dennison—L. M. Seed, Big Four Oil & Gas 19 20
J. B. Jett, The Ohio Oil 4 5
C. M. Irvin, The Ohio Oil 9 ..... abd
W. E. Robbins No. 2, The Ohio Oil 17, 18 ..... abd
Bond—Charles Gillin, The Ohio Oil 8... 3

Wells completed 3
Production 28
Abandoned 3

WABASH COUNTY
Wabash—E. Alka heirs, Joe S. Young, Jr., & Co. 4 75
Kate Kyser, Wirebaugh & Co. 7 ..... dry
Friendsville—H. C. Yelton, William Bell & Co. 4 8

Wells completed 3
Production 83
Dry 1

CLARK COUNTY
Wells Drilling
Casey—W. Davis, W. C. McBride, Inc., 1.
Johnson—Norman Bennett, W. C. McBride, Inc., 1.
H. V. Blakeman, W. C. McBride, Inc., 1.
Martinsville—John McNurland, Rhodes & Keith 1.
Wells drilling, 4.

CRAWFORD COUNTY
Wells Drilling
Martin—Ira Renchen, Karns & Co. 7.
J. S. Baker, H. D. Barker & Co. 1.
J. P. Willson, William C. Kennedy Co. 9.
Honey Creek—J. E. Cullom, Barlow & Co. 1.
Licking—B. A. Matheney, Southerland & Co. 1.
Wells drilling, 5.

LAWRENCE COUNTY
Wells Drilling
Dennison—J. H. Buchannan, The Ohio Oil 6.
J. E. Lingenfelder, Kewanee Oil & Gas 24.
Lukin—B. Eason, Frank Ellison 1.
Wells drilling, 3.

WABASH COUNTY
Rig
Wabash—Garrett Cozine, Ray Upland & Co. 1.
B. J. Clark, Phipps & Blosser 1.
Wells Drilling
Wabash—W. M. Price, Risley & Co. 1.
J. C. Sparks, Joe S. Young, Jr., & Co. 2.
C. Litherland, Art Smith & Co. 1.
James Schafer, Carl Smith & Co. 1.
John Broon, Breen Oil 6.
Collison heirs, Ellison & Co. 6.
Jesse Cisel, Oldendorf & Co. 2.
E. Banks, A. L. Gher & Co. 1.
Friendsville—J. C. Wood, Wood Oil 4.
A. B. Keen, Miller & Legelsem 1.
Crumb, Miller & Legelsem 1.
Rigs, 2; wells drilling, 11; total, 13.

CLINTON COUNTY
Well Drilling
Brookside—John Knohloff, Mt. Vernon Development 1.

MADISON COUNTY
Wells Drilling
Namcoki—Goodrich, Goodrich Brothers 1.
Pine Oak—Gussweiller, Assembly Oil & Gas 1.
Wells drilling, 2.

MACON COUNTY
Well Drilling
Hickory Point—A. Parrish, Powers & Co. 1.

SHELBY COUNTY
Well Drilling
Holland—William Prosser, A. L. Ginther 1.

COLES COUNTY
Well Drilling
Ashmore—Luther Houghton, Shrider & Co. 2.

INDIANA FIELDS

Summary of Completed Work

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Blackford	0	0	0	0	1	1	
Jay	2	65	0	0	0	2	2
Adams	3	35	0	1	0	5	5
Randolph	0	0	0	0	0	1	1
Gibson	3	50	2	0	0	6	6
Pike	4	70	1	1	2	10	12
Daviess	3	135	1	0	0	13	13
Sullivan	1	0	1	0	0	2	2
Vigo	1	0	0	1	0	3	3
Allen	0	0	0	0	2	1	3
Knox	0	0	0	0	0	1	1
Dubois	0	0	0	0	0	1	1
Benton	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Martin	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Spencer	0	0	0	0	0	1	1
Warrick	1	0	1	0	0	1	1
Perry	0	0	0	0	0	1	1
Bartholomew	0	0	0	0	0	2	2
Total Mar.	18	355	6	3	4	57	61
Total Feb.	12	96	5	0	3	46	49
Difference	6	259	1	3	1	11	12

WELLS COMPLETED
JAY COUNTY
Penn—A. C. Brown, Ridenour & Co. 1.. 35
Bear Creek—C. Brinkerhoff, R. P. Ridenour Trustee 3 30

Wells completed 2
Production 65

ADAMS COUNTY
Jefferson—William Smitley, Richberne Oil 4 20
Fred Kauffman, G. B. Oil & Gas 1 . 15
Scott McDonald, Raymond Grimes 1. abd
William Keer, Homer Pontius & Co. 1, 2 ..... abd
Blue Creek—George Swank, Paul Schulte & Co. 3 ..... gas

Wells completed 3
Production 35
Gas 1
Abandoned 3

GIBSON COUNTY
Washington—Frank Thompson, Bell Bros. 1 ..... dry
Center—Margaret Hollingsworth, Mann & Huber 2 50
Barton—John Manhan Bell Bros. 2 .... dry

Wells completed 3
Production 50
Dry 2

PIKE COUNTY
Logan—Ern G. Wilson, Wiser Oil 2 .. 20
E. Beck, Henry Skidmore 3 50
Monroe—George A. Taylor, Gem Oil Corp. 5 ..... gas
Washington—Morrison Sisters, Molton & Noble 1 ..... dry

Wells completed 4
Production 70
Dry 1
Gas 1

DAVIESS COUNTY
Veale—F. B. Colbert, Hartman, Sargent Co. 1 120
Wonders, Thorne Oil & Gas 1 .... dry
Barr—10 East Washington, Phipps & Blosser 1 15

Wells completed 3
Production 135
Dry 1

SULLIVAN COUNTY
Turman—James Huff, G. G. Billings & Co. 1 ..... dry

VIGO COUNTY
Prairie Crek—William Riggs, A. R. Morris 1 ..... gas

KNOX COUNTY
Harrison—Ralph Ray, North Side Oil & Gas 1 ..... abd

WARRICK COUNTY
Greer—Charles and J. A. Watt, Sunlight Coal 1 ..... dry

BLACKFORD COUNTY
Well Drilling
Washington—Charles Barton, Herman & Roberds 1.

JAY COUNTY
Wells Drilling
Penn—W. and L. Horn, Ridenour & Co. 1.
Bear Creek—C. Brinkerhoff, R. P. Ridenour Trustee 4.

ADAMS COUNTY
Wells Drilling
Jefferson—Fred Kauffman, G. B. W. Oil & Gas 2.
W. Greenfield, George Slee Oil & Gas 1.
Blue Creek—John Cross, Paul Schulte & Co. 1.
Wabash—Dr. Wilson, Haines & Co. 3.
Monroe—Stengel & Craig, Rechard Pet. 2.
Wells drilling, 5.

RANDOLPH COUNTY
Well Drilling
Monroe—Elmer Deal, Craig & Dodson 1.

GIBSON COUNTY
Wells Drilling
Washington—Marguret A. Mauck, Gray, Morrisey & Co. 2.
Veirling heirs, Euclid Oil 4.
Montgomery—John Eniow & Co. 1.
Center—George Annis, Bell Bros. 1.
Barton—H. E. Raiborn, Gem Oil Corp. 3.
M. M. Conrad, Bell Bros. 2.
Wells drilling, 6.

PIKE COUNTY
Rigs
Logan—B. Beck, Henry Skidmore 4.
Washington—County Farm, A. B. Bement 1.
Wells Drilling
Logan—William Miley, J. Morrisey & Co. 1.
Pink Atkinson, Alex Singer & Co. 1.
Marion Miley, Buery, Wadson & Co. 1.
Walter Wilson, Charles Blosser & Co. 2.
Ern G. Wilson, Wiser Oil 3.
Anna E. Falls, Andrews & Burden 1.
Lona Miley, Claud Chandler & Co. 1.
Madison—N. B. Coffman, The Ohio Oil 6.
Washington—Weathers, Molton & Noble 1.
Clay, Eldon Catt, A. B. Bement 2.
Rigs, 2; wells drilling, 10; total, 12.

DAVIESS COUNTY
Wells Drilling
Veale—Batchelor, Hartman, Sargent & Co. 1.
Frank Swan, Hartman, Sargent & Co. 1.
Sylvester Swan, Hartman, Sargent & Co. 1.
Andy Treas, Hartman, Sargent & Co. 1.
Stanton Barber, Phipps & Blosser 1.
T. Ragsdale heirs, Peek Oil 2.
Allison, Cavinal & Co. 1, 2.
Crosby, Bell Bros. 1.
Northwest of Corning—Caho, Thorne Oil & Gas 1.
East of Comback—Ike Purcell, Unknown 1.
Southeast Part County—Robinson, Unknown 1.
Harrison—Dill, Cochran & Co. 1.
Wells drilling, 13.

SULLIVAN COUNTY
Wells Drilling
Fairbanks—L. B. Hale, The Ohio Oil Co. 1.
Turman—Alex Raley, Raley Oil 3.
Wells drilling, 2.

VIGO COUNTY
Prairie Creek—James A. Stout, The Ohio Oil 1.
William Riggs, A. R. Morris 2.
Riley—Sec. 14-11-8—E. D. Fagan & Co. 1.
Wells drilling, 3.

ALLEN COUNTY
Rigs
Maumee—D. Helmke, Robinson Brothers and Innis 3.
J. F. Butt, Estes, Manion & Co. 3.
Well Drilling
Maumee—M. Roamake, Schuran Oil 1.
Rigs, 3; wells drilling, 1; total, 9.

KNOX COUNTY
Well Drilling
Posey—John Keyser, Western Gulf Oil 1.

DUBOIS COUNTY
Well Drilling
Cass—William Meissner, Wheller & Co. 1.

BENTON COUNTY
Well Drilling
SW Part County—Jesse Voliva, Chicago parties 1.

JOHNSON COUNTY
Wells Drilling
NW of Franklin—McQuiston, Universal Development 1.
South of Acton—Unknown 1.
Wells drilling, 2.

MADISON COUNTY
Well Drilling
NW of Pendleton—Willis Little, Pendleton Natural Gas 1.

MARTIN COUNTY
Well Drilling
Loogoottee—Kenner Dilley, Loogoottee Light & Fuel 2.

MONROE COUNTY
Well Drilling
Polk—Saddle Creek Oil 2.

SPENCER COUNTY
Well Drilling
Jackson—Doctor Hoover, D. D. Flannagan 1.

WARRICK COUNTY
Well Drilling
Pidgeon-Vick—Folson, Turner Oil & Gas 2.

PERRY COUNTY
Well Drilling
Near Tobinsport—Mrs. Hal Weatherbolt, Chancellor & Co. 1.

BARTHOLOMEW COUNTY
Wells Drilling
Wayne—Granville, W. H. Leel.
Ham Creek—Near Hope, Unknown 1.
Wells drilling, 2.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for February

	Monthly Bbls.	Daily av. Bbls.
*Prairie Pipe Line Co. ..	3,976,000	142,000
Gulf Pipe Line Co.	1,272,393	45,443
Texas Pipe Line Co.	844,129	30,147
Magnolia Petroleum Co.	1,797,183	64,214
Empire Pipe Line Co.	951,598	33,986
Cosden Pipe Line Co.	871,459	31,124
Sinclair Pipe Line Co. ..	1,719,928	61,426
Other lines	11,676,000	417,000
Total February	23,108,690	825,340
Total January	24,093,948	777,224
Difference	985,258	48,116

Shipments

§Prairie Pipe Line Co. ..	4,736,228	169,151
Gulf Pipe Line Co.	1,153,214	41,186
Texas Pipe Line Co.	921,847	32,923
Magnolia Petroleum Co. ..	1,212,370	43,300
Empire Pipe Line Co.	904,514	32,304
Cosden Pipe Line Co.	793,035	28,323
§Sinclair Pipe Line Co. ..	2,353,022	84,036
Other Lines	10,360,000	370,000
Total February	22,434,230	801,223
Total January	23,273,458	750,756
Difference	839,218	50,467

Stocks

*Prairie Oil & Gas Co.	28,500,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line & Gypsy Oil Co....	7,530,595
The Texas Company	3,494,853
Magnolia Petroleum Co.	3,920,813
Empire Pipe Line Co.	2,635,741
Cosden Pipe Line Co.	2,447,619
*Sinclair Crude Oil Purchasing Co.	18,750,000
Carter Oil Co.	14,238,662
*Other Lines	10,000,000
Total February	93,518,282
Total January	90,410,600
Difference	3,107,682

*Estimated. §Prairie Pipe Line shipments include Texas crude and Sinclair Pipe Line Shipments inclue Wyoming, Texas crude.

NOTE—Stocks do not include approximately 3,200,000 of crude oil held in storage on private tank farms and leases and approximately 2,280,000 bbls. of Texas Panhandle crude in storage in Oklahoma and Kansas.

EASTERN PIPELINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan. '27	Feb. '27
Nat. Transit	131,633.26	139,482.60
S. W. Pa. P. L. ...	91,671.32	86,131.61
Eureka P. L.	356,257.54	360,073.04
Buckeye P. L. (Macksburg) ...	306,329.21	306,133.22
Buckeye P. L. (Cleveland)	8,898.60	9,641.18
Buckeye P. L. (Lima, etc.) ...	105,316.84	118,280.53
Indiana P. L.	7,885.73	10,308.90
Cumberland P. L..	269,494.29	253,098.35
N. Y. Transit	20,624.12	20,720.01
Tide Water P. L..	164,816.27	166,244.50
Pure Oil	181,623.77	150,656.96
Emery P. L.	51,721.92	50,806.49
Paragon Dev.	29,152.24	27,518.82
Pittsburgh P. L. ..	4,492.56	5,450.00
Stoll Ref.	12,571.47	11,799.41
Total	1,742,480.14	1,716,345.62
Daily average ..	56,209.04	61,298.06

Note: Indian Refining Co. also reported other receipts of 218,692.38 bbls. Paragon Refining Co. had other receipts of 111,806.74 bbls. Paragon Development had other receipts of 1,727.51 bbls. Pure Oil had other receipts of 23,458.34 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan. '27	Feb. '27
Nat. Transit	339,689.42	301,540.53
S. W. Pa. P. L..	376,678.56	332,520.45
Eureka P. L.	185,046.54	189,772.61
Buckeye P. L. (Macksburg) ...	152,046.86	143,321.85
Buckeye P. L. (Cleveland)	728.46	735.84
Buckeye P. L. (Lima, etc.)	836,059.08	766,275.55
Indiana P. L.	996,930.49	899,418.14
Cumberland P. L..	170,916.10	149,258.83
N. Y. Transit	268,721.23	134,606.31
Northern P. L. ..	146,042.27	149,470.27
Tide Water P. L..	142,906.68	118,783.21
Pure Oil	185,495.89	187,941.11
Emery P. L.	56,726.35	48,549.33
Paragon Ref.	162,514.12	135,377.69
Indian Ref.	327,021.57	296,038.10
Paragon Dev.	26,199.57	29,126.84
Pittsburgh P. L. .	4,316.92	6,213.32
Total	4,378,040.11	3,878,949.98
Daily average ..	141,227.10	138,533.93

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of January and February were as follows:

	Jan. '27	Feb. '27
Nat. Transit	958,639.67	1,009,705.83
S. W. Pa. P. L. ..	783,090.22	746,374.61
Eureka P. L.	1,283,959.42	1,326,061.87
Buckeye P. L. (Macksburg) ...	418,744.17	435,819.09
Buckeye P. L. (Cleveland)	60,087.54	76,981.10
Buckeye P. L. (Lima, etc.) ...	3,048,045.04	3,227,532.22
Indiana P. L.	563,842.08	584,982.76
Cumberland P. L..	584,088.08	606,176.77
Southern P. L. ...	418,089.38	420,485.22
N. Y. Transit	576,728.60	661,277.88
Northern P. L. ..	423,641.24	426,553.78
Pure Oil	472,351.27	459,193.89
Emery P. L.	6,125.26	6,932.77
Paragon Ref.	38,841.67	24,907.55
Indian Ref.	66,887.83	91,489.53
Paragon Dev.	10,670.92	11,007.61
Pittsburgh P. L. .	4,170.61	3,679.88
Total	9,718,003.00	10,119,162.36
Increase	263,490.81	401,159.36

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February, showing the gross stocks of the above fields:

	Jan. '27	Feb. '27
Pennsylvania	3,703,521.72	3,708,705.44
Lima	741,567.39	798,170.33
Kentucky	1,034,892.99	1,056,674.37
Mid-Continent ...	4,134,204.33	4,451,184.17
Illinois	103,816.57	104,428.05
Total	9,718,003.00	10,119,162.36

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
January	62,638	56,831	55,630	56,209
February	68,023	60,606	60,394	61,298
March	68,721	60,575	61,644	.....
April	71,058	63,062	63,019	.....
May	63,942	59,217	60,580	.....
June	63,230	61,270	64,131	.....
July	64,208	62,639	63,206	.....
August	59,942	59,686	61,815	.....
September	62,930	62,510	64,639	.....
October	64,976	60,995	62,704	.....
November	56,282	59,350	61,774	.....
December	55,814	57,974	58,756	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1924	1925	1926	1927
January	145,518	157,889	156,056	141,227
February ...	148,732	160,863	159,488	138,534
March	147,098	154,591	150,239	.....
April	147,611	151,429	152,371	.....
May	134,997	146,995	160,998	.....
June	143,010	149,467	160,257	.....
July	134,187	161,338	160,945	.....
August	123,120	161,730	161,929	.....
September ..	127,325	156,719	158,915	.....
October	123,170	145,388	161,132	.....
November ..	124,400	143,582	152,668	.....
December ..	151,392	150,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
January	11,353,276	9,859,170	9,718,003
February	11,192,924	9,679,354	10,119,162
March	11,158,297	9,438,292	.....
April	11,062,082	9,805,851	.....
May	11,207,562	9,631,767	.....
June	11,093,796	9,585,904	.....
July	11,067,453	9,734,687	.....
August	10,974,481	9,668,947	.....
September ..	10,781,753	9,433,732	.....
October	11,086,850	9,269,806	.....
November ...	11,068,158	9,257,667	.....
December ...	10,458,445	9,464,512	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line Co. at the close of business for the months named and not counted in the stocks and averages reported above.

1926—	Runs	Shipmts.	Stocks
February	2,580.23	2,776.19	12,819.45
March	2,764.62	1,732.77	13,841.30
April	3,137.40	4,519.68	12,459.02
May	2,933.29	2,096.35	13,296.96
June	3,217.62	1,655.15	14,858.43
July	3,025.86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
September	2,788.18	3,373.06	13,985.68
October	2,991.86	2,307.75	14,671.26
November	3,810.60	1,664.55	16,817.31
December	3,847.52	5,561.11	13,103.72
1927—			
January	2,641.54	1,470.42	14,274.84
February	2,764.30	1,082.82	15,956.32

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	2,661,980.68
Runs from wells	570,400.72
Other receipts	426,905.04
Regular deliveries	402,200.32
Other deliveries	591,721.72

The amount of Illinois oil run by the Tide Water Pipe Co. in February was 25,430.44 bbls. and deliveries were 74,750.31 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1926—	Runs	Deliveries
February	632,611.99	506,310.51
March	753,300.74	524,625.95
April	610,957.04	487,604.00
May	682,416.67	498,456.90
June	693,102.34	558,054.94
July	713,490.66	490,092.82
August	701,795.92	555,766.59
September	688,798.66	516,083.05
October	681,648.96	531,467.38
November	651,263.33	498,439.37
December	668,909.58	587,947.61
1927—	Runs	Deliveries
January	621,421.03	530,085.98
February	595,831.16	476,950.71

The Tide Water Pipe Co., Ltd., has delivered in February, 249,851.65 bbls.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
November	6,400	16,600	27,633	23,533	17,300	91,467	.....	.....	.....	.....	.....	91,467
December	13,645	7,129	39,645	7,419	9,774	77,613	.....	.....	.....	.....	.....	77,613
January	5,097	8,258	26,290	15,932	14,807	70,365	.....	.....	.....	806	806	71,161
February	26,214	3,036	32,750	8,571	18,250	88,821	.....	.....	.....	.....	.....	88,821

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
November	14,867	7,167	55,967	5,700	27,433	111,133	18,133	35,200	2,500	2,900	58,733	169,866
December	12,484	10,613	56,139	7,452	24,064	110,742	12,648	40,742	2,903	10,833	67,032	177,774
January	14,032	8,226	64,387	4,065	31,064	123,774	7,903	43,639	.....	4,123	55,645	179,419
February	12,000	14,429	87,286	5,321	26,714	145,750	4,786	46,786	2,143	3,607	57,322	203,072

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
March:	Month	18,826,786	14,312,886	11,014,238	3,324,827	5,115,837	1,889,636	3,161,250	3,349,000	61,002,530
	Daily average	608,282	461,706	355,298	107,577	165,027	60,956	101,976	108,032	1,967,855
April:	Month	18,091,771	14,468,190	10,799,760	3,330,120	5,137,610	1,959,570	3,221,404	3,183,000	60,191,335
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,239	106,100	2,006,337
May:	Month	18,667,144	14,507,008	11,940,797	3,516,649	5,482,939	2,231,938	3,459,489	3,317,000	63,122,955
	Daily average	602,166	467,968	385,187	113,440	176,869	71,998	111,596	107,000	2,036,224
June:	Month	18,269,417	14,073,616	11,782,200	3,346,476	5,064,760	2,206,830	3,437,905	3,365,000	61,546,093
	Daily average	608,981	469,117	392,740	111,549	168,822	73,561	114,597	112,167	2,051,536
July:	Month	18,743,199	14,657,482	13,983,759	3,582,267	5,019,992	2,173,813	3,336,064	3,422,000	64,917,576
	Daily average	604,619	472,822	451,089	115,567	161,932	70,123	107,634	110,323	2,094,699
August:	Month	18,765,080	14,618,236	17,093,586	3,681,436	4,878,191	2,190,739	3,457,697	3,329,500	68,024,465
	Daily average	605,325	471,556	551,406	118,756	157,361	73,896	111,538	107,726	2,194,338
September:	Month	18,104,954	14,466,510	17,580,100	3,450,060	4,802,320	2,079,840	3,141,133	3,330,000	66,755,817
	Daily average	603,498	482,217	586,003	115,002	160,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,553	15,730,689	19,001,283	3,714,627	4,625,138	2,186,589	3,071,720	3,398,000	70,664,139
	Daily average	611,808	507,119	612,948	119,827	149,198	70,535	99,088	109,613	2,279,488
November:	Month	19,173,128	16,876,950	18,693,160	3,593,490	4,299,480	2,054,911	2,843,587	3,216,000	70,845,706
	Daily average	639,104	562,565	619,772	119,783	143,316	68,497	94,752	107,200	2,364,990
December:	Month	20,276,950	17,852,968	19,763,591	3,654,156	4,266,189	2,018,734	2,658,301	3,313,000	73,823,890
	Daily average	654,095	576,868	637,213	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,134,873	19,030,745	18,546,990	3,668,323	4,076,469	1,905,570	2,610,302	3,332,500	73,305,772
	Daily average	651,125	613,896	598,290	118,333	131,499	61,471	84,203	107,500	2,364,315
February:	Month	17,982,711	19,752,348	16,483,292	3,349,416	3,574,256	1,784,104	2,385,125	3,007,200	68,318,453
	Daily average	642,240	705,441	588,689	119,622	127,652	63,718	85,183	107,400	2,439,945
	Total 12 months	226,051,070	190,367,462	186,572,861	42,221,902	56,133,891	24,662,244	36,793,578	39,570,200	802,373,208
	Daily average	619,318	521,554	511,159	115,677	153,792	67,613	100,804	108,413	2,197,381

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